



SEQUENCE LISTING

<110> Shen, Ben
Liu, Wen
Christenson, Steven D.
Standage, Scott

<120> GENE CLUSTER FOR PRODUCTION OF THE ENEDIYNE ANTITUMOR
ANTIBIOTIC C-1027

Sub
BT
<130> 2500.128US1

<140> 09/478188

<141> 2000-01-05

<150> 60/115434

<151> 1999-01-06

<160> 102

<170> PatentIn Ver. 2.1

<210> 1

<211> 42000

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: cDNA

<220>

<223> orf; relative position 658-11

Q!
<220>

<223> orf; relative position 1478-930

<220>

<223> orf; relative position 2713-1649

<220>

<223> orf; relative position 3238-2851

<220>

<223> orf; relative position 4971-3442

<220>

<223> orf; relative position 5982-7478

<220>

<223> orf; relative position 9900-7573

<220>

<223> orf; relative position 11349-9982

<220>
<223> orf; relative position 28590-29588

<220>
<223> orf; relative position 29632-31197

<220>
<223> orf; relative position 31280-32590

<220>
<223> orf; relative position 32809-34392

<220>
<223> orf; relative position 35274-34458

<220>
<223> orf; relative position 17924-16653

<220>
<223> orf; relative position 16653-15919

<220>
<223> orf; relative position 15922-14690

<220>
<223> orf; relative position 14643-14212

<220>
<223> orf; relative position 13012-14079

<220>
<223> orf; relative position 12835-11351

<220>
<223> orf; relative position 25564-24986

<220>
<223> orf; relative position 24702-23566

<220>
<223> orf; relative position 22878-21424

<220>
<223> orf; relative position 21407-19926

<220>
<223> orf; relative position 19929-19267

<220>
<223> orf; relative position 19191-18031

<220>
<223> orf; relative position 35938-35516

<220>
<223> orf; relative position 27214-28593

<220>
<223> orf; relative position 25815-27170

<220>
<223> orf; relative position 23546-22875

<220>
<223> orf; relative position 35274-34458

<220>
<223> orf; relative position 37559-38938

<220>
<223> orf; relative position 40986-39367

<400> 1
gtcgactcta gaggatcccg ggtgaggagt aggggttacg gacgaaggag ggggtgcccgg
60
cgacgcctgc ggcgaagggc ggttccttga gttcgaggcc ggtggcgagg acgacgtggt
120
ccgcgtcgag gatctgcgtg tcggggagcg gccagggcg cagccccctcg gtcaggtacg
180
gggtgaggcc cctgacggtc acctcgaagc agcggtcgtg ggaccggggcg tcgagcgctt
240
ccccgtccgc ttccacaagg acgacgccgg gacaggactc ccgtgcggcc tcgaccagtc
300
gggcgtcgag gtagtcctgg aagatgcggc gggggggcggg gccctgttcg gtgaacttcc
360
acgaagccca gcgccggggc cagtcgcgcc ggtcggcctc ctggttgccc cagttgatga
420
agtcgagcac gtcctcgagg aacaccgaca tcctgccggc ctggatattg aagacgtggt
480
cccagggggt gccgtcacgg tgataggcga cgccggccga gcggtaggcg gcgcgccgct
540
ccaggaggac gacttccagc ggtcttctcg cgaaatgaag caggcgtatc gcggtcgccg
600
tgctgccag gcccgcccct acgaccagca ccctggggcg cgcacccgct atgcccatga
660
agcctcccc gctgactcag ggcggcgcggt cgcgcgctcc cgtcgggtgtc ctgcgtgact
720
ggaagtcccc tgacctggcg tcaactccac tgatccgtaa ggggatcgcg ggagtggata
780
cgggtcaggt cgtgcacgat cgtggcacca gacagatcac cacgtcgata ggcactcgtg
840
agccgcgccc ggggctcgac ggggcggggc accggcaggg gcggccgcgt gatcagccgg
900
agcctgtccg ggggcgtgcg tcggggcggt cagctgtcga tgtcgggaac gccagggacg
960
tcgatctcgg tcggggcgta gtggttgaag tagttggtgt agaggttcac ggccacgtgg
1020

acgaagacct cggcgagctc ggtgtccgtc catccctgtg ccacggccgc gttccacgag
 1080
 gcgtcagacg cctcgcccac ttcgccggcg atctccctgg ccacctggac cagtgtttcg
 1140
 agcttcacgt cgtcgccggg cgtcccccgg cgaatcgcca cgggtctctc cagcgtgaaa
 1200
 cccgcgacct tcgcccacac cgtgtgcgcc gcctggcagt acgcgcacgc gtcgaccgcg
 1260
 cccacggcga gggcgatcgc ctcgcggtgt cgggcgtcga acgttccatg ttcggcgacg
 1320
 gctccggtga tcgcggcgta ggtttccagg accacggggg aatgggccat tccccgtgg
 1380
 atgttgagca ctcgcccga cgccttctcc agtcggcgca ggatgtctcc gccggctgcg
 1440
 ggtgcggtgt cgatggtgtg gacgggaatc cgcggcatgg gaatgcctct cctcgtagtg
 1500
 atgggagttc ctcgctccctc cagtctgccc aagcacctcc cccggtgagc tgtcccggcc
 1560
 gccctccggc cccttctagg caggtcgccc ggtgggtgcg cccaggacg tcacctcgcc
 1620
 gcaccaccgg gagccccgag gggcgaggtc agaggccgag cacctcctcg gccagggcgg
 1680
 tgccccgaac acgggcctcg atcttggcga aggccaggtc gcgtgtggtg gaggtgtcgt
 1740
 cggcgaacgg ggagaagccg cagtcgtcgc aggttcccag ttgctcgacg gggatgtagc
 1800
 gggcgggcag caggatgcgg tcgcgtacct gctcgggggg ctcgaccact gggtcgatcg
 1860
 ggtcggtcac cccgaggaag acgcgggcgg cagggggcag gtggtcacgg acgatgctca
 1920
 ggacccgctc ggggtccgct tcgcccggcca gttcgagata gaagttgccc gccttgagct
 1980
~~ggaagagett gggcagcagt tcggcgtagt cgatgtcgag gctgtgcgtg gagtccctggt~~
 2040
 cgccgccggg gcagggtgtg acgccgatgc gggcggtttc ctcggcgctg aagcgcccca
 2100
 ggacttcgtt gttgagggcg atgaagtcgt cgaggacgcc gccgctgggg tcgagcttga
 2160
 gggacagccg ccctcgggtg aagtcgagct ggaccacgtg tgcccccgcg tccaggcagc
 2220
 ctcggatgtc ggcttcggcc tcgtcggcga ggtcgcgcag gaactgctcg cgggggtagc
 2280
 cctcgatggg agtggcgggg tagaggaggc tgagggcgga ggggtgcgatg accgcctgct
 2340
 tcagggggcg gtccgtgagc tgccgtgcgg cgcgcagata ggtttcggcc cgcacctggt
 2400
 agcggaaggg cccttgggtg atgctgggga gctgccgggt gtgcccgtct gcgaagggga
 2460
 tgacagcgcc gtcgggcgag aggggtgtcga ggccggtcac ggggtaggtg gcgaagctcg
 2520
 gcttggactg ttcaccgtcc acgaggacgg ggctgccgac tcgttccagt cgtgtcaggg
 2580
 tgtccgcgac ggcctgttcc tgctgtttgg ccaggctcgt ggcgtccagg gttccctggg
 2640

catgcgccgc aagggcggtgc aggagtgtcg cggagcgccg aaggctgccg atcggctcag
2700
tggcgatggg catggccgaa gagtagggaa gaggctgggt ttcgaaccac cgcaaagctt
2760
tgattgccgc tttttcaggg gaagttgatg cgaagtcgcc gagcggcgga acgtgctgat
2820
gtatgggggg cgggaggagc ctgccccgtt ctaggagccg gtcgccccca cggtaggaga
2880
ggtgcccagc tgggagcggg gggctttttc gccgacgcgg ttgggctcga tggtagcggg
2940
gtcgacggcc tctccggggg caccttgccg gtagacgcct tcggggctcg agtcccggtc
3000
atgggggagc aggaagaaga cccggcgccg gtacagaccg ctgtccgggt ccgcttcggc
3060
gtcggccccg agttcgatgt agccgatcat gcggccgtcg cgggcgtagc gcggcttggt
3120
cttgcccggg ggggtcttgt ccagggcctg gcggacgtag tcgagtcctt cgggatcttc
3180
gagccacacg accttcgcct cgtgaacgag atcgtgtcg gtcagtagcg agtcatggc
3240
ggcgacctt ccttcgtcgg cgtgcaccgg gtggggaagc ggtgcctgcg tgatgtgtgt
3300
tcgtctgcgg cggtagggcg cagtgggtgc gaccgccgt ggtgccgggt ctcgccaaa
3360
gcacgggcag gtacgtcctg gggcactcac atcgtagatg gggtagcctt ccgagggca
3420
gtgcctccgg tcggaggacg ttcattcgtc ggctgccaga gcgaggttg ggtagaactt
3480
ccggccgttg gatttgatca tgtcggcagg tgaggcgagg cccacttctt ggcgagccg
3540
ggtggcgaag gcacgggcgg tcccggggcg gatgccttca ctgtgtgcgc accaggtgt
3600
gtaggacgtg tagagaaggg cctgttcgac gcgtagctcg ctgttctcgg ggtcgtggag
3660
gcagcactcg gcgaggaagc ggccgatgtg gtcctcgggt ttcgcgtatg cgctgggtgg
3720
gatgcggacc cggtaggggc cggcgagtgt gtcgccccg gcgaggtagc ggccccccc
3780
ttcggtagc cagtgcagga tcccggggcc ctgcctcctg acgagttcga cagccaggtt
3840
gtcgatcttg cgttcgtcgg ggacgatccg ttcgaagggc aggagggcga tgcggcgcca
3900
gaaggcgaag ccgcccgttg agacctcggg gcggtggttg cccagcagcc acagcttggt
3960
cgtgggtgtg aaggagaaat agtcctgccg catgcggcg gccttgatct tgtaccgcc
4020
ggtcagcagg cggacgcgcg cctcgtcgaa gcggtcgttg ggcttgagct cgctgcacac
4080
gatgaggcgg cggccgtgga gttcgggtgag ctcggtggag tgttcggagt atgcgccacg
4140
gtccatgagg aaaccggcg gggctgcgtc ggcgtagtcg ccgagaatct ggatcatcac
4200
gtcagggaga acggatttgc cgttctttcc ctggccgttg agaaagggca gcacctgcgc
4260

cccgacgtca cccgtgatgg agtagccgag aaggaggtgg aggaagtcga tcatctccc
 4320
 cccttcggcg tcaactgccga aggtgtcttc gaggaacagg tgccagcggg ggggtgggat
 4380
 gtcctggggg gaggcgctgg tggcgcgga gtggaagtcc cgggtggggg cgggcttgcg
 4440
 catacggccg ttgaggaggt cgaccactcc gtcaggggtg cacagggcgt aggggtctcc
 4500
 gtcgaggggtg tcgggatcga gggagagggtc gggagaggcc tttgcctggg tgaggagcgc
 4560
 cttcataccg gtcgtcgaca ggggtcgggc tttgtggtgg tgcagttccc ggtcggtgaa
 4620
 cagcccgcgg ggatcgctgc cgggcacttc ctccgccatc tctccggcag cccacagggc
 4680
 agctttctcg cctccggccc gcttccaccg gtagccgtcc caggagtacc agcccaggcc
 4740
 ctccacgtgc cggaactggt cacggtagag acggacgaag agcttggcgt tgccgcggtc
 4800
 ggtcaggctg gcgggaatct cggccgcctc ccaggcggtc gcggcgacgg gggcctcggg
 4860
 agcggcctgg acagggagga gcggcgctgg ggccgggggtg gtttcgaggg ccagcatctg
 4920
 ctgagcggcg gcagttgcgt caaagcgagg gccctcggcg ctgctgctca tggacgtcct
 4980
 tcgagatgga gcggtcgggc ggtccccgct gcgggaacgg catgaatgat cttcccggtg
 5040
 cggacagagt gccaggggca gcgcattgtc ggggggacaa cggcccgttt cggacgaggg
 5100
 ccggccgacg gggggaagca ggggccggca accgggtggc ggggcggcgt gagcgagggc
 5160
 acgagcggcc cggtagggg ggaagggtc gtctctccgt ggggcggcac gttgtggtcc
 5220
~~tcgtccgtca gcttgcgttc ggttcagcc tctgacccc caataaggcg aaagctgctg~~
 5280
 gtcaagcatc tttcgtgaca ctccggcagg gactgaaggg actgtctttc ggaatgagtg
 5340
 taggggggtt tcgggtgggg accgcgcctc gactccccgg cggacgggat ctgttcggtc
 5400
 ggtcccttgg gtccctcccc ggatcgcggc agggaccaa gggggcgggtg cggcgggcgg
 5460
 tcggtgaggg gccccgggtg agggactgag ggtctgtatg gagcgataag aggggtctgaa
 5520
 ggggcggaga gagtttcggt ccctgcgttg agtccctggt catcaccgca ggtcagaggg
 5580
 gttttgaggg gtgaaaaagg gactgaaggg actcaacttc ccattatga gctgagtaga
 5640
 agaaagcagt atgacgatat cggcgccctac atacgcgcgc gtacatagtg agcttataat
 5700
 gcggaagttg agtcccttca gtcccttttc gtggggtcgt atccctctg actgcgttga
 5760
 ccgtcgcgcg tccgcgcagg gaccgaagag ggaccaagtc cctgcgcggg gcgggcgacg
 5820
 gtaatcgtgc agtgccccct cccccgttcc ccacagcgag tcgtcgtccc cctgtgaggc
 5880

cggagaggggt cctagaaccc ctcagggggcc gttctgtggc cctctggggc tctcctggc
 5940
 catttaccct atggggggcgc ttggggggcgt caggaggggct tgtgaggggct ctgccgggaa
 6000
 gtggcgggatt gcgcatggca ggagatgccc cgacagcggc cgggaatcga cgatgtcccc
 6060
 cgacccctat ccagcgtccg ctgatcctca ggaggcagac cttgcaggct ccagaagcga
 6120
 agaacggccg gtccccggag cagccgcagg aagagcggat cgtcctggac gtatggctgg
 6180
 cgaactacc gttccccacc tatgacgggc gtgacttctt cgctccgctg cgcgagcggg
 6240
 cggcggagtt cgagcgcgcc ccccccgat accgggtcga catcaacggc cagacttct
 6300
 ggaccatccc cgagaaggtg gcgcgcgcca ccgcggaggg caggcctccg cacatagcgg
 6360
 gctactacgc caccgacagc cagttggcgc gggacgcgcg caggccccgac ggggaagccgg
 6420
 tcttcacctc ggtggaggcc gcggtggccg gccggacgga gatactggga caccgggtgg
 6480
 tgggtggagga cctcgacccc gtgggtgcgcg actcctactc gttcggggggc gagttggtgt
 6540
 cgctgccgct cacggtcacc accatgctct gctacgcaa ctctccctc ctcgcgcgcg
 6600
 ccggtgttcc ggagttgccc cgtacctggg atgaggtcga agcagcctgc caggcgggtg
 6660
 ccagcgtcga cggggggccc ggtcacggaa tcacctgggc caacgacggc tgggttttcc
 6720
 agcaggccgt cgcccttcag aacgggggtgc tgaccgatca ggacaacggc cgctccggct
 6780
 ccgccacgac ggtggacgtc acatcggacg agatgctgga ctgggtccgc tgggtggacg
 6840
~~acctccatga gggggggcat tacctctaca cggggggggc ctcggactgg ggcggggcgt~~
 6900
 tcgaggcttt cgtccagcag aaggctcgc tccacctcga ctcgtccaag gccgcccggg
 6960
 aactcatcca ggccggtgca caggccgggt tcgaggctgc ggtgttcccc ttgcccagga
 7020
 acgcgaaggc cccggtagcg ggccagcccg tctcgggaga ctccctgtgg ctggccgcgg
 7080
 gactcgacga gaccacgcag gacgggctgc tcgctctcac ccagtacctg atcagcccgg
 7140
 ccaacgccgc ggactggcac cgcaccaacg gtttcgtacc ggtgaccggc gcggccgggg
 7200
 aactgctgga agcgacaggc tggttcgacc gccggccgca gcaacgggtg gccggggagc
 7260
 agttgaaggc gtccgaccgg tcaccggcgg cgctcggcgc gctgctcggc gacttcgcgg
 7320
 ccgtcaacga ggtcatcacc gcagcgatgg acgatgtcct gcgcagtgga gcggaccccg
 7380
 cgaaggcctt cgccgaagcc ggcgtggccg ccagcaact gctcgatgcc tacaacgccc
 7440
 ggaaccgctc cggatccggg accccctccg ccgtctgaga tccggtaccg gggcacaggg
 7500

gcgccgccgc ccgctttccc ggccggggcac tggccggggg acatgctctc ccgcccccg
 7560
 caggacgtag ggtcaacccg cctgcgcctt caggtggcgg cgcagatact caccggtcag
 7620
 ggaggaatcc gcggcgagca ggtccttcgg tgtgccggtg aagacgatct cgcgcctc
 7680
 ccgtcccccg tcgggaccca ggtcgatgat ccagtcggcc tgctgcacca catcgaggtt
 7740
 gtgctcgatg accacgacgg tgttcccggc ctcgacgagc ccgtccagga gcttcagcag
 7800
 ggtgtcaacg tccgacatgt gcagcccggg ggtgggctcg tccaggacat agaccgtgcc
 7860
 cgtgcgggtg agctggtcgg caagtttgat ccgctgcagt tcaccgccgg agaggctgga
 7920
 aagcggctgg cccaggctga ggtacccaag accgacgtcg acgagagcgc gcagtttcgg
 7980
 cagcagggcc ttctcgggtga agaactcgac ggctcgtcg gcgggcagct ccaggacgtc
 8040
 cgcgatcgac tccccgcgaa gctgggtgctc caggacctcg ggcttgaagc ggcccccctc
 8100
 acagacaccg cagtgcgtgg tcaccggatc catgaaggcc agctcgggtga tgatgacccc
 8160
 gcggccctgg cactcctcgc acgaccctt ggagttgaag ctgaacagcg aggcgttcgc
 8220
 gccggtctcc ttcgcgaaca gcttgcgagc cgggtccatc aggcggaggt aggagaccgg
 8280
 tgtggagcgc gacgaggcgg cgatcgcgga ctggtcgaca aagaccgcgt cggggtgcgc
 8340
 ctccatgaat gcccgggaga tcaggctgct cttgccggaa cccgccacc cggtcaccgc
 8400
 ggtcagcaca ccggtgggca cggccacgga gacctgcttc aggttgtgga gatccgcgtt
 8460
~~ctccacggte agctccccg tgggcggggc gacctctcc ttcacgcgg cccccgcg~~
 8520
 cagagcctcc ccggtccggg tcttcgcctt ccgcagcttc gcgaaggacc cctcgaacac
 8580
 gatctgccc ccgtgcactc ccgccccggg accgacatcg acgatgtggt cggcgatctc
 8640
 gatcacatcg gggtcgtgct cgacgaccag cacggtgttc cccttgctgc gcagcgcgcg
 8700
 cagcaggtcg ttgagccgcc ccacgtcgcg cgggtgcagg ccgatgctgg gctcgtcgaa
 8760
 gatgtacgtg agcccggcca gaccactgcc gaggtggcgc accatcttca gccgctgccc
 8820
 ctgccccccc gagaggtcgg ccgtgggcct gtccagggtc aggtagccga gcccgatgga
 8880
 cacgatccgc tccagggccg tgcgcgcggc tttcgcgaga ggggcagcgg ccggctccgt
 8940
 gacgccggcg agcacctccg tgaggtcgcg gacctccatg ctcgagtagt cggcgatgtt
 9000
 cttgccgtcg atccggacgt cgagcgcggc ggcgttgagc cgcgcgcccc ggcaggaggg
 9060
 acagactccg tcggtgacga aacgttcgat gacctcgcgc ttgcggtcgc tcagcgcgct
 9120

gaggtcgcgc ttgaggttga gccgctcgaa ccggtcggcc aacccctcgt agttcgtctg
 9180
 gaactcgggtg ctcttggtct tcagcgtcac cttcccgcgc gtgccgcgca gcagcgtgtc
 9240
 cagctcctcg gcgctgtact cggcgatcgg cttggccgga tccagacggc cggacttcgc
 9300
 ccagatctgc cagtccgggc taccacctt gtactcgggg aaaaggaccg ccccgctcgc
 9360
 cagggacttc gagcgggtcca gcatcttgtc caggtcaggg gcgatgctct ggccgagacc
 9420
 gtcgcagtcc gggcacatgc cctgggggtc gttgaacgag aacgcggaga cgccgagcga
 9480
 ggacggcccc tegtcttcg tcgtgccgaa ccgtgcgaac agggccccga tcatcggctg
 9540
 tacgtccgtc atggtcccca ccgtggaccg ggcgttgccc cccacgggct tctggtcgac
 9600
 gatcacggg gtggtgaggt tctcgatcgc ctccgctga ggacgttcgt acttcggaag
 9660
 ctggttgccg atgtaccagc tgaagggtga gttcagctgt cgctgggcct ccacggccac
 9720
 cgtgtcgaag acgatcgacg acttgcccga acccgagacc cccgtgaaga ccgtgatctg
 9780
 gttgcgggga atcgtcaggg agacatcttt gaggttggtg .atccgcgcgc ccgcgatgcg
 9840
 gatgccgtct cccggggccg atgtttttcc cgcgccggcg gtggggtcgg tgacgctcac
 9900
 agagttttcc tcttggttc cgtacatgat ttaccgtgtc agccgggcaa accggcggaa
 9960
 cggtaaccac ctagcttgta ctcaggaggt gtccggggtc ttctcctccc gtgctgactt
 10020
 gggggccggc ccgccggaca gggccggctc cgtgttccac cccgccagcc gatccccccg
 10080
~~ctcgtctcg tctcctcga gaacgatccg gctgctcgcc cagcgcagga tcggcggcgc~~
 10140
 cgtcacccgag gtgatgaggg cgaccagcac gatgatcgtg aaggtcacgg tgtccagtac
 10200
 gccgatacgc aggccgacca gggcgatcac cacctcgatc attccacgcg agttcatccc
 10260
 cgctccgagc gccagcccct cgtagcggct catcccgcca ctacgggcgg cgacgtacgc
 10320
 accggcgaac ttgccgaaag tggccaccaa cagcaccccg agggccgtga gcagcaccga
 10380
 cggctccgcg agtgcggtca ggtccatgcg aagccccaca ctgccagga acaccggtgc
 10440
 gaacacggcc atgaccagcg tgccgagcgg ggcgagccgt accggggcga tgtgcctcag
 10500
 cagggtcgca ccggccacga acgccccgaa caacgcctcc atcccggccg ccgcggtcag
 10560
 cgccccgtac aggacgacca cggccacgcc gacggtgacg gccgatacgg ggaccgggt
 10620
 gtcacccgta cgggacagcc gcctgccgat cggggccgcc accgcacacg ccgcggcgac
 10680
 gaagacggtc gtccaggcca tcgtgggtcag gaccacgggc cccccggccg cccactcgc
 10740

cagcgccgctc accagagcga gcagcagcca gccacccgcg tcgtcgaaca ccgctgccgc
 10800
 gatgagcagc tggccgacgt tgcggtgcgt cagattcagg tcggcgagcg tcttgggcat
 10860
 caccgggagg gccgtgacac acatcgcgac cccgaggaac agcgcggaaga cgcgccgctc
 10920
 tccggagtcc gcgagcagcg aggcggggcac caggtagccg gtggcgatgc ccagccccag
 10980
 aggaatcaga agacccgccca ggctgaccgg ggcgggccaga cccccgcgct tgcgcaggat
 11040
 ccggggggtcg aactgggcac ctgcgatggc caccagcaga aggacgccga actggcagaa
 11100
 cgcgtcgagc aggtgcgctt gcgagatgtc ctcgggaaac agcctgccgg aaagtcccgg
 11160
 cgagatctgc cccagcaggg tcggcccagag cagtaccccc gcggtcagct cccccaccag
 11220
 cggcggcaga ccgatccggg tccccagccg tcccagaccg taggcacagg cgagcaggag
 11280
 gccgacctgg agcaggaaga ccgtcagcgg ctccccgccc agcggcgacg tggttgcgag
 11340
 cacagccacg tcaggaccgc gcaccgggaa cccagcccag cccgtccgct gacgcggcca
 11400
 gacccccctg cctcaccggg cgctcggccc ccgcctcatc cccagaaga gcccggtgctt
 11460
 gcagtgcggc gctctgctcc atgaggcggc ccaccacctt tcccggcacg gcgccgtgcg
 11520
 gccgctcggc gtcgcccga gcggtgtgcg tcatgccggc catctcgtcg gacgcctcgg
 11580
 agaaccgctg cctggcccgg gccgtgtcgg cgaactcgtc ggaggagacc ccgccgatca
 11640
 gttcgacgaa ggactgcagg tcggagtccg cgggtgttga gatcttccgg gcctgccaga
 11700
~~aataggagtc ctccgaatgg tgcattgtcgt agaagccgac caggaactcg tagaagcggc~~
 11760
 cgtactccag ccggtagcgg gcctcgaact cctcgaacgc gctggtctcg tcgaccgacc
 11820
 cgtccaggca ggagttgagc gagcgcgctg ccagcagtcg gctgtaggtg gcgaggtgca
 11880
 ccccgaggga gaacaccggg tcgacgaagc acgcggcatc cccgaccagg gccatgcccg
 11940
 gcgcccagaa cttcgtgttg ctgtacgacc agtccttgcg gaccgggagc tcgccgtagg
 12000
 ggcctcgggt caccggggtg gcctcggaga gcttctccgc gatcagcggg caggccgcga
 12060
 tgaacgactc catcgccttc tcggggtcgc cctgcaccag gctcgcggag tcccggttca
 12120
 ccactgcgcc gacactcgtc agctcgggag acaggggtat gtaccagaac caccggtgct
 12180
 cgaaggtgca ggtgaagatg ttcccggagt tcggcttcgg aagccgcttg ccgccgttga
 12240
 agtagccgaa cagggccagg ttgcggaaga agggcgagta ctcgcgcttg gcgcccgact
 12300
 tcttgtacag cccaccgggtg ttgccggagg cgtccacgac gaaacgggag cccacctcgt
 12360

gctcgcgccc ctccggagtc ccgtagcgca cgcgccgcac ccggccgtcc tcggccttga
 12420
 gcacgtcgag gacatcgctg ttctcccgca cctcgacacc gtgcctgcga gcgttgtcga
 12480
 gcaggatctg gtcgaacttc atgcgctcga cctggtagcg gtaccccgct gcccccggca
 12540
 tccggcgcgga gacggcggaag tcgaacgtcc acggttcggg gttggcaccc cacttgaacg
 12600
 tcccgcctg cttgatcgct aaggctgcct tcttcagctc gtcggagaca ccgaggaggt
 12660
 gtgcgatgcc gtggacgggt gaggggagga gcgactcacc gatctggtag cgcgggaagg
 12720
 tctccttctc cagctggagt acgcgatggc cccgcttgct gaccagcgtg gagacggctc
 12780
 agcccgccgg acctccgccc accacgatga cgtcgtactg cgctgacacg tccacggact
 12840
 ctcttctctg cacatcgggc gtctcatatt ccaggaatc ctctggcccc cccaggtgct
 12900
 gccgcattct cggatttgct aagtcgtggg cattctgcga gaagcatgaa ccgcgtggcc
 12960
 cggctctacag tggcggtgaa ttctcagtgt tgcgctgaag ggccggcacac gatgaaggca
 13020
 cttgtactgt cgggtggttc ggggacccgc ctgcgcccga tcagttacgc catgccgaag
 13080
 cagctcgctt cgatcgccgg gaagccagtc cttgaatatg ttctggataa tatccggaac
 13140
 ctcgatatca aagaggctgc cattgtcgtc ggtgactggg ctcaggaaat tattgaggca
 13200
 atgggtgacg gcagccgctt cggctctgcgc ctccactaca tacgccagga gcaacctctg
 13260
 ggcacgcgc actgcgtgaa actggcccga gacttcctcg acgaggacga cttegtcctc
 13320
~~tacctaggcg acatcatgct ggaaggagac ctgtccgcgc aggcggggca cttectccac~~
 13380
 acccgccccg ccgcgcggat cgtcgtgcgc cagggtgccg accccggggc cttegggggtg
 13440
 atcgagctgg acggcggaagg gcgtgtgctg cgcctggctg agaaaccccc tgaaccgcgc
 13500
 agcgacctcg cggcggtcgg cgtgtacttc ttcaccgcgg acgtgcaccg cgcgctcgac
 13560
 gcgattagcc cgagccgacg gggcgagctg gaaatcaccg acgccatcca gtggctgctg
 13620
 gagcagggcc tgccggtcga ggccggccgc tacacggact actggaagga caccggccgg
 13680
 gtcgaggacg tcgtggagtg caaccggcgg atgctcggcc gtctggcgct ccaggtgtcg
 13740
 ggcgaggtgg acccgagag cgaactggtg ggtgcggtg tcgtcgagga gggcgccccg
 13800
 gtgacgcgtt cgcgggtcgt gggaccagcg gtgatcggcg cgggcacggg cgtcgaggac
 13860
 agccagatcg gaccgtacgc ctccatcggc cggcgctgca ccgtgcgggc gtcccggctc
 13920
 tccgactcca tcgtccttga cgacgcctcg atcctcgcgg tgagcggact gcacggctcg
 13980

ctgatcggaa ggggcgcgcg gatcgcgccc gggggcccggg gcgaggcccc gcaccggctg
 14040
 gtcgtcggcg accacgtgca gatcgagatc gcggcctgac gcacccaccg gagcaccggg
 14100
 gggaggctcg gcaggggctg caggccgtaa gaagggtgc cggggcgggg cggaccgcc
 14160
 cgggcagccc acaggtcccc ggtccgcgga tatgggggac tcgaggttcg atcagccgaa
 14220
 ggtcagagcc acgtggccga ggtcgagccc ggagttgccg gcgccgaggt tacaggcggc
 14280
 cgtggcgag tcgacgctgc cgaccggcgt gccttcgggc gtggagcccc tgtacgactt
 14340
 gcgcacgacg aagctgaacg acgccgctcc ggacgcgtcc gtggtgaagg acgtcgcggt
 14400
 cgccgggttg cacgcgtcct ggccaccgac cggagcgcac tgggcatgt agtaggtctc
 14460
 gccggcgcg gcaccgctga ccgacaccga cacgtctgt ccgtcactca gacccgaggc
 14520
 gggactgacg gagaaggcgg gcgcggcgaa ggcgacggac tgtgcggcgg cggccaggcc
 14580
 gatggatgcg acggccacga cgccgaacct ggaagcacgg cgggacatgt gacgtaacga
 14640
 catgcgtagg ctccgattcg aggaggggggt tgatcactcc atgaaaggat cacctcgccg
 14700
 gacggccgcc tgcattctcc tctgtgctct cgtggatttc cggcacggca ctcccgtcga
 14760
 cgcccgcccc cagaatgcgg cagaccccc gcacctctc cggccccacc gccgtaccgg
 14820
 tgggcagcga cagcaccgc tcggtgagcg cctccacett cgggagcggg tcgggcgcgt
 14880
 ggcgcgcgag gtcggaccgg tagggctcgc agctgtggca gccggggctg aagtaggcgc
 14940
~~ggccaggac gttgtgeegt tggagcaccg cctggagttc gtcgcggtgc agcccggcgc~~
 15000
 ggacggcgtc cacctcgatg acgacgtact ggcagttcga cagctcgttc ggatcctgcg
 15060
 ggcggacccg gacgccgggc agtccgtcga ggtactgctc gtacagacgg tagttgcgcc
 15120
 ggttgatcgc ggtgaagtga tcggcggact ccaggagggt gaggcccatg gccgcgctga
 15180
 tctcgtgcat ccgcgcgacc gttccgctcc cggatgatctc atgcgcggcg ttgagccct
 15240
 ggtggcgcgt ggcccgagc cggtcggcca gggcgtcgtc gtcggtgacg atcgccccgc
 15300
 cctcgaagct gttcacgaac ttcgtcgcct ggaagctgaa gatctccgcc gtgccgaagc
 15360
 cgccgatcgg ctccgaccgg taggtgcagc cgaaggcgtg ggccgcatcg aagagcaggt
 15420
 gcagcccgtg ctccggcgcc agcttggtca gctcgtcgat ccgggcccgt ctgccgaaga
 15480
 cgtgcacgtc caggatggcg cgggtacgcg ggccgatgag ccgctccacg tgtgccacgt
 15540
 ccgcggttcc ggtctcctcg tccagttcgc agaagacagg caccgcaccg atccagtcca
 15600

gtgctgtgggc ggtggcgacc caggtgaagg agggcacgat cacctcgtcc ccaggaccga
 15660
 tgcccagggc cttcgcggcg acctggatgc cgggtggtggc gttcgatacg gcgacgcagt
 15720
 gcctgacctg ggtcagctcg gccacacggg cctcgaactc ccggaccagg gggccgtcat
 15780
 tgggtgaacca caggcgctcc agcgccccgt cgatccgttc catcaaaccg tcgcgggagc
 15840
 ccacgttcgg gcgtcccacg tgcagcggtt cgctgaagta gggcgtgggt agggagtcca
 15900
 gacgcaccgg gccgcccgtc atgccgtgcg cagcccgacg aagaggccgg ggctgttggg
 15960
 ccggccgtcg gccagccgga agccggggcac gaaccgcacc gagagcccca ccgattcgaa
 16020
 ggcgtcgggtg tactgctcgc ggggtgaagag gctggaggtc aggacctcgg agaactctct
 16080
 gaagccggag gcgtccgcga cccggaaccg gacctccaga cgtgacttgt cgccctggcg
 16140
 cacggagtgc gtcattccgcg tgatgacacg gccctcctcc tgggtgcagat ggccgcccac
 16200
 atgcccgctg aggaagttct cggggaaata ccagggttcg gcgacgagga cccccggg
 16260
 gttcaggtgg tgggccatgg ccgacaccgc ggcttgagc tcggtgacgg acccatctc
 16320
 gccgagcgcg ttgcccattg aggtgatcgc gtcgaagggtg cggcccaggt cgaacgaacg
 16380
 catgtcaccg gcgtgcagcg ggacgccggg aagccggccc gccgcctgct ccagcatcgc
 16440
 gggcggtac tcgaggccct ccacatggcc gaagagcgtg gcgagcgtct ccagatgggc
 16500
 tccggtgccg caggcgacgt ccaggagcga cacggcgctc gggcgggcgg cgaggatcag
 16560
~~ctcggtgagc cccggggcct ccaggatcga gtccttgccg cggctgcgga acacgaggtc~~
 16620
 gtagaacttc gcgtgctcgg ggccgtactc catcagacga gtccttcgc agactgggcg
 16680
 gagatgattc tgggctccgg gatgggaacg atgaacttcc ctcccgcctc caggaagcgg
 16740
 cgctccttgc ggacgacctc gtcggtgtag ttccaggcga ggaggaggta gtagtccggc
 16800
 tcggtggcag cgacctctc cggaggaagg accgggatgc ggttccccgg cagcagtttg
 16860
 ccgtgcttga ggctggtggg gtcgccgcag acggtgatgt cctgatccgt cagaccgcag
 16920
 gccatcagca actgggtccc cttggacggt gctccgtagc cggccacgcg gtggccgtcc
 16980
 gcggccagac cgcgaacgag cgtacggatc gcttcgggtca cgcgcgtcac ccgctcggcg
 17040
 aacgcccggg agggggcatc cgtcagcagt ccgcgctcct cctccaggcc gagcagcgcc
 17100
 gcgaccgagg gctccgggac ccgtgcggcc gactcgcgcg cggcgacgac cgcgatcgaa
 17160
 ccgccgtgca cggcgaccgg ctccacgtcg atgatccgca ggccgtgcgc gccgaagagg
 17220

tggcgcagtg tgtgcagggga gaagtacgac aggtgctcgt ggtagatcgt gtcgaactgg
 17280
 ttctcgtcga gcaggttcag caggtagcgc acctcgatga ccaggacgcc gtcgtcgtcg
 17340
 agcactgctg cgacgccctc caggatgcgg tgcacgtcgt cgatgtgcgc gaagcactgg
 17400
 cggccgatga cggccttggc cctgccctgc tcaagggcga tgcggcccg cggctccggg
 17460
 ccgaagaagt ccgggtccgt ggggatcccc cgggcgttgg cgatctcggc gaggttggcc
 17520
 gccgggtcga ccccgccac ccgcagccc gccgccgga acatcgcgag ctgggtgccg
 17580
 acgttgctgc ccagctccac gaccaggctc cggaggcga ggcttgcccg gcgggtcgcc
 17640
 agcccagca tgtgcgccat gtgctcgcgg atctggctcg agtcggagga gacgtagacg
 17700
 tagtgcttga acagtgtccc ggggtcgacg acatggcgaa gcgtcatcag ccggcacgac
 17760
 cggcacacga tgacgtcgag cgggaagacg tcctgcgcct catcggcgct gcccggtatc
 17820
 acgaaccgt tggccagcgg cagcgagccg aaggagatca ctcgggtcca gtcgtccgca
 17880
 ccgcatacac ggcacgtctc gtcccgcctg catttctcca gcatgaagtc tcctgacggc
 17940
 gaatgccgac gcatcgggcc cgtcgggtccg gggacggtca atctaggggt ccggccgacg
 18000
 ggcgtccac ttcgtatgtg ccctactggt tcagcggagc ggacgggtga acgcccgtac
 18060
 gtcctcgatg aggagctgcg gctgctccat ggccgcgaag tgcccgcgc ggtcgaactc
 18120
 ggtccaccgc gtcagggtcg gcaggatgcc ctcggcgaac gaccggatcg gccgggtggc
 18180
~~gtcgtccggg aacaccgca cggcgacggg ggcgtcagc ggccagggcc cggcccaggt~~
~~18240~~
 gcgggcgaag tccgccatgc cgcgagccga ctcgtagtac aactgagcgc tggaaccggc
 18300
 cgtcgcggtc agccagtaga tcatcacgtg ggtgagcagc cgggtcccgg agatggcctc
 18360
 ctccacgttc ttgccgccc cccactcctg gaacttgctg agaatccagg cgagctggcc
 18420
 gaccggggag tcggtgaggc cgtaggccag ggtctgcggg cgggtggcct ggatgcgctg
 18480
 ccagccgatg ccggtgtcgg cgaactcccc gctgtgcgcc agcttgccca ggtcgtctc
 18540
 gtccaggcgc ccgatggcct ccggggcgct ctggggcggg aaggtcacca gcatgttcag
 18600
 gtggacgccg gccacgtgct cggggtcggc cagccccagc tccagcgaga cgaccttcc
 18660
 ccagtcgccg ccctgggcga cgtaacgctc gtagccgagg cggttcatca gtcgcccca
 18720
 ggcgcgtgcg atccgccga cgtcccagcc cggctcggca gtcgggccgg agaagccgta
 18780
 gccggcatg gaggggacga cgacgtggaa ggcgtccgcc gggtcgccgc cgtgcgcgcg
 18840

cgggtcgctc agcggccccga tgacgtcgag gaactcggcg accgagcccc gccagccgtg
 18900
 ggtgaggatc agcgggatcg cgtccggctc gggcgaacgc acgtgaagga agtgcacgtc
 18960
 ggcgcgctcg atcgtggtga cgaactgggg gaacgcgttc agctcggcct ccgcggcacg
 19020
 ccagtcgtag ccgtggcgcc agtggtcggt gagtccttg aggtaggaca gcggcactcc
 19080
 gcggtcccat ccggatccgg gtatctcgga cggccaccgg gtcgcgtcga tccgccgggt
 19140
 taaggtcgtc gaatgtcgga ctgggtcgat ctcgatacgg aagggaacga cagtgaatcc
 19200
 accctcgtag ttgtgggagc ggggcggcgc gaggcggccg ccccgatgtg atccggggac
 19260
 cgtgtctcag gccggttcgg ccggcgcggc cgcgccttcc cgtgcggaga aggaccgcac
 19320
 ggaggacagg aagttgcgga tcatcggcat gccgtgttcg gtccggaagc tctccggatg
 19380
 gaactggacg gactccaccg gcagcgaacg gtggcgacgg cccatcacgt acccgtcgtc
 19440
 cgtggagcgc ccggtgacct cgagggacgg cgggaccgtg cctccggca cgatcagtga
 19500
 gtggtagcgg gtcgcgaaga accccgcggg cagcccggtg aacactccgc gcccgtcgtg
 19560
 cgtgatccgg ctcgtcttcc cgtgcatgag atgccgggcg gggacggtgg cggcgccgta
 19620
 ggcgcggggc acggcctgat gcccagaca gaccccgagc agcgggaccc ggccggcgaa
 19680
 ggctggacg atctcgacgt gcccgagggt gtcggggtgg ccggggcccg gcccagcag
 19740
 gaccgcgtcc ggccgcacga gcccacatc gtccggggtc atgagatgcg accgcacat
 19800
~~gacgggtcc gcgcggcgg acatcagata ctggcgagg atgtcgacga agctgtcgaa~~
~~19860~~
 cgcgtcgacc accaggaccc gcggggcctc ggtgcctgcg ccggatccgt cgggagacca
 19920
 caagtcaca gcaactcctc tccggtgacc gcccagttag tggcgctcat cttggccagc
 19980
 gtctcggtcc actccgcccc cggttcggaa tcggcgacga ttccggccga ggcccgggtg
 20040
 cggtagacgc cctcgtggtg gaaaagggtc cggatgcaca gcgcgaggtt ggtgtacccg
 20100
 cccacgtcga ggaggccgag cgccccggcg tacaggccgc ggcggctgcg ttcgacggac
 20160
 tcgatgatct ccatggcgcg gatcttcggc gcgcccgtca tgggtgccggc ggggaacagg
 20220
 gcggcgatgg tgtcgaaggc atcgggtgtc acccgcgccc ggccgacgac cgtggagacc
 20280
 aggtgcagca cgtgggagta gccctccacg tccagctggt cgggtacgtc gagcgtgttc
 20340
 ggccggggca tccgtccgat gtcgttgagg cagaggtcca ccagcatggt gtgctcggcg
 20400
 atctccttgg gatccgacct cagccggact cccgcggcga tgccgccgtc cgcgcgggac
 20460

cgcgccaccg tgcccccgat cggccgcacg gtgacctcgc cgtcctcgat gcgtacgaac
 20520
 agctcggggc tggcgccgat cagacggtgc ccgtcgatgc ccgccagata catgtacggg
 20580
 gaggcgttcc gcccgcgag gcgctggtag acgtccgcgg ggtcggccgt cgagcggatg
 20640
 gagagctcgt gaccgatctg cacctggtag atgtcgccga cggcgatgtg cttcagacac
 20700
 cgctcgacgt cgttcgcgaa cacttcgggg gcgctgtcgt cggtgaccgc ggaggcgggg
 20760
 aagccgtctg cggacggatc gggccaggcc tgctccacgt cggcgaggag cccggtgacg
 20820
 gtctccggcg cgaggccggg ccagtacggg gactcgtgga gcagcagttc gcatcggccg
 20880
 gtggcgagat cggtgaccac gctgccccgg tgcaggacca tgcgtacgtc cggcaggcca
 20940
 ggccggttct cgatgaggtg gggcaggtec tcgatgtagc gggccgtgtc gtacccgaag
 21000
 aacccgagga acccgaagcg gaagccggac gcggaccctt cggcgtcgaa catgtcccgc
 21060
 atggcccgcg gcagcggcca caaccgccc gcggtacgca gccgcagccc ctggggggccg
 21120
 tcctccagga gcgcgcggc ccgctccagg agcaggcccc gcagggcggg tacgccctcg
 21180
 acgcgcacca cccggtcggg gaccgagagc gagagcagcg cggcgaagcc gacgaactgg
 21240
 tgcttgcggg cgcggggccg gccggccgcg gactccagga ggtagacctc gtcggggccg
 21300
 aagtgtcgg ccagcgcgcg gtaggcgggc agggcgcccc tctccttcac atcgaggcgt
 21360
 cgtgtccgca cccgcaccgg ggccgagacc acgcaactgg cggtcactct gggtcctccc
 21420
 ggatcacgtg gtgatggcgt agcgggtgtg cactgaagg ~~gaggtcagca cggcccggtc~~
 21480
 ggggccggag cggttgtcga cgacgcgcgc ggccttcag ctgacgaagg agccggtgtg
 21540
 ggtcacgggg tcgaggtcgg tgtccacgac gatgccggcg tgcgcgccgg tccgtccct
 21600
 gagccgggcg gcgacggcct cggcgatgcc ctgccgttcc cctcggcgcc cggccagcag
 21660
 gtccatgcgc acggtgacgg cgtcgctgcc gtcgtcctgc cggtcgatga cgacctggtg
 21720
 gccgaggcag ccgccgaccc cgtcgaggat cgcggcctcc agctcggcgg gctggagggt
 21780
 cacgtcggcc agggggatgc ggtccgcgac cggccgatg acctggatcc gcggtcccgg
 21840
 cagcggctcc ccggggcccg ccgggaggat gcggaccagg tccccggtgc ggtagcggat
 21900
 cagtggtttg atgccgtcca ccagcatggt gaggacgagt tcgccctctc ccgtgtcgcc
 21960
 gaccacggcg ccggtgtccg gttcgacgag ttccggtcaag tagttgggct gggcgagggtg
 22020
 gacgctccg gtgtccgctc cgggtggcgat gcacagggct tcctgggagc cgtagagcgt
 22080

gggccgcacg acggcttgcg gccagagggg cgccacgttg tcggcgaact gcgggggtgca
 22140
 gatctcacc agcgtgagga agagcttcac gggaagccgg gccagggtcgt agccgtagtg
 22200
 cagggccgcc ttggcaaggc tcaggcacag cgccggagca cagacgacga cctcgacctc
 22260
 cagctcctcg atcagccgca gcgccttacg gaatcccacc ctggggggact cgggccagat
 22320
 cttgacgtga caggccccca gctccgctgc caccgcggtg aacacgtccc cgaacgcgta
 22380
 cagctccgac ggccccatca ggcccacgac gggcatccgc cccccgaacc tcgcttcag
 22440
 catgcccgc caggactccc ggacggcgat gttgctggtc gcgatgtcct tctcgccgcg
 22500
 tgggcacggg gtggccgccc cggtgggtccc ggtggtctcg tagtagatgc gtgcttcgtg
 22560
 cagcggggccc gacaggacgt cgtgcatctc ccgcccagg tcgtccttgg tggtaaggg
 22620
 caggtccgcc aggttcgcgg gggtgacggc ctcgacgtcc acgcctgcca gatggcggcg
 22680
 gtagaacggc gagcggcggg tgacgtggcg cagtacggcc gtcagccgtt cgccctccca
 22740
 gcgctcgcgg tcggcgggcg tgagttcgcc gcggtagaac gcgtcgctca cctgcccgtg
 22800
 ggccgaccag aactcgctgt ccgcgtcggg gtccagcggc ccggtcccgc cgggaccggg
 22860
 ccgcccggcg tctctcacgg ctgtgcctgg agttcgttga gcgcgaggcc gacctgctcg
 22920
 ttgacctcgt tggaggccag cacgtccgaa cggccggtga gccgacggtg ttcgtcgagc
 22980
 agttcgatca tgtccgtcat cctctcgacc aggcgcgaga cgttggtgag gccctcctcg
 23040
~~tccttgagcg cgtcgccccg gtgcagcgcg tgcacgtcg ccgggaagcc gctgcccacc~~
~~23100~~
 aggatcatcc gggtgagcag ggcattgacg gtcagctgag ccataacctc gccggcgctg
 23160
 tagcggcggg cgaccgagat gatccccgcg accttggttc tcagcggccg gtcgaagcgc
 23220
 agataaccga ctccggcacg ctcgatgaag gtctgcatga ggctggccgt gccgaatccg
 23280
 tgcacggggc ccgcgaagat gatcccgctc gccgcgacca tcttcgccac gacctcgggc
 23340
 accccgtcgg ccagggtgca ggccaccggc ctgtcgttgc agtccccgca gggcccgcac
 23400
 cgctccatcc tgatcgagcg caggtcgacg gcctcgaagt cgacgccgcg gttctctgct
 23460
 acgcgtgccg cgtgccgcag tacgtcggcg gtggtgccgt cacgttccga accgttgatc
 23520
 gcgaggatct tgagttgtgc gctcacgagg ggctccttg gtgagtcagg tgcgctcggc
 23580
 ggtcggctcg ggggaactgt ctggccgccc ctgggtccgg agccgcaggg ccggctcggc
 23640
 gggggcggga ggaagaccgc ccgcggcgcg gccgccacgc tcgccgaacc ggatgagggg
 23700

cttctcgacg agatagaagc tgatggctgc cagcacgacg ctgatcgaga tcgtgaagag
 23760
 gaacagttcc cagaacccca tgtcaccccg gaattccggc gttggcacgg gagacttgcc
 23820
 gaagatgctg ccgttcctga gccagaggtt gatcacgacg tcgtgccaga ggtagacgcc
 23880
 gagggagatc tggccgagga agaggatcgg cttgctgggtg aagagcgcggt ccgagaaccg
 23940
 ggactcggcg ccggggaccg tcatcgggtgc caggagcagc aggggtgaagg aggtcaggat
 24000
 gaagtggctg acgagctcct gggccagggc cgcgttgctg cccatgcccc ggatgccgat
 24060
 gggcttggtg gcgtagagga ggtacagcgg gatgagcggg acccagcaga tcagcggggc
 24120
 ccggatcacg aaacggtaga agccccgggt ccctggcgct gcctcggcggt acgcggagta
 24180
 gatggccagt gccatgcccc cggcgaagca gccggcgtag tagggcgggc agtaccactg
 24240
 catcgctcgc ccggtggagg ggaggttggg gtacgtgacc cagccgatgg ccatgacttc
 24300
 cagcgcggcc agcggcagca ggaggcggcg tgccttctgc ccgggagtg tgcgcgcccg
 24360
 cgcgagccgg tggccgatcc aggcgatcag cggcagggcg aggtagaacg tgaactcggc
 24420
 ggggaccgtc caggtggggt cgatgccgtg catcggttg ccctcgggca gatagaagt
 24480
 catgagcagc acgggcccga ggacgtcgct gacgctgtcg atctcgaacc agttgtagcc
 24540
 ggggattgcg aagacgagca acaggtagta ggcgggcagg atgcgcaggg cccggcggtt
 24600
 gaggaaccgt ccggtggcgg gccgcttcgt cccactgatg gtgacgcggg cgtaggggtt
 24660
 gtacagcatc attccggaca gagcgaagaa ~~gggggaaggc atacccccag accgtccgcg~~
 24720
 aggacgcccc agaacgggtt gcccggtca ccgacgaagc tgcccactcc ggcttggag
 24780
 gcgacgtggt agacgaccac acccagcgcg aggacacctc gcagtccttc gaacttcggt
 24840
 attcgcttgc tttttgcgcc acctgcgtcg cgaaggacgt ccccatgga acagtccct
 24900
 ttcccttggc acttgctcgt tgacttccc aaatagtcgg gtctgcggag tgtgagccgc
 24960
 atctccaatc gtgctgttcc ggtgctcagg acgacttggt tcggcctgag tgggaaggca
 25020
 gccacccccg ccgccccgcc tcggccagac cgggggccga ggagtccgt tccgagagga
 25080
 tcggagtgat ctccggcggc caggcgatgc ccacctccgg atccagcgga ttcaagccat
 25140
 gttcgagccg ggggtcgtag gccgccgagc acaggtagac gatcacgcc tcgtcgctca
 25200
 gcgtgaggaa tccgaagccc agccccgcgg agacgtacag cggcgtccg ttctcctcgc
 25260
 cgagctccac ggtccgccag ccgccgaagg tgggcgaccc caccgggatg tcgaccacgg
 25320

cgccgaacac gctgccgcgc aggcagctga agtacttggc ctggccgggt acgcccccg
 25380
 cgaagtggat gccccgcagc accccgtggg aggagatcgc gcagttcgcc tgccgcaggt
 25440
 cgaaggagtg gcctacggtg cggcggaagg gctcgccctg gaaccactcg cgaacgagc
 25500
 cccgttcgtc acggaagacc tgcttctctc cgtccacgc tcccgagatc ccgatcggct
 25560
 tcatcgctgg ccccttctct cgacttctct cgacgactcg cgggaggcgg ccgaggggtc
 25620
 cgccggggcc gtggaacgc cgcagtctag atgcggcggc accgggggca ggggggtgcg
 25680
 gacgacgtcc gccccacctc agcacaccgg gagatgcagg tcggtgacgg gcgacgtgac
 25740
 gatgcaacgg tccgaggccc gggtgcccgg acgacggccc acagagccat cggagcaacg
 25800
 gaggcggacc gcagatgacc aagcacgccc gtgaccgcgc ggtagtcctc ggcgcagggg
 25860
 tggcggggct gctcgccgcg cgcgtcctgt ccgagacgta caaggaagtg ctggtgatcg
 25920
 accgggaccg gttgggcggc acggagcagc gccgcggtgt cccgcacgga cgccacgccc
 25980
 atgcgctgct ggccaagggg cagcagatcc tcaacgaact cttccccgga ctcgacaccg
 26040
 aactcacctc ggccggaatc cccgccgggg acatcgccgg gaacctgcgg tggacttca
 26100
 acggccgccc gctccagccc ttcgacaccg ggctgatcag cgtctcggcg acgaggcccc
 26160
 agctggagtc ccacgtgcgc gcacgggtcg ccgcgctgcc acaggtgaag atcatggacg
 26220
 ggtgcgtgat cgggggcctg accgcctcgg ccgaccgcag ccgcgtcacc ggtgtcgagg
 26280
 tggtcgacga gtcgggtacg gacaccccg ~~cgccctgga~~ ggccgacctc gtcgtcgacg
 26340
 tcacggggcg cggctcgcg actccgcct ggctggagga gttcggatac gagcggcccc
 26400
 cggaggaccg cttaagatc gatctggcgt acaccacgcg ccacttcaag ctcaaggaag
 26460
 acccctacgg cacggacctg tcgatcaacc cgggtggcatc gccgagcaac ccgcgcggcg
 26520
 cgttcttccc cgggtcgcg gacggcagct ccagctctc cctcacgga atcctcggcg
 26580
 accacccgcc caccgacgac gagggttcc tggcgttcgc caagtcgctt gccgcgccg
 26640
 agatctaccg ggccgtccgc gatgccgaac ctctcgacga accggtcacc ttccgcttcc
 26700
 cggcgagcgt ccgccgccgt tacgagaggc tgcgccgttt ccccgcgggg ttctcgtca
 26760
 tgggcgacgg cgtgtgcagc ttcaaccccg tctacggcca gggcatgacg gtcgccgccc
 26820
 tggaggccgt ggcgctgcgg gaccacttgc gcgacgcccc ggaccccgac gccctgcgt
 26880
 tcttcggcg tatctccacg gtcacgacg ttccgtggga catcgccgcc ggagcggatc
 26940

tgaacttccc cggggtggag ggcccccgca ccatgaaggt gaagatggcc aacgcctaca
27000
tggccccgct gcacgcagcg gcagccgtcg acggcgcggt gaccggggcg ttcttccggg
27060
tggccgggct ggtggacccc ccgcaggccc tgatgcgccc ctccctcgcc ctgcggggtca
27120
tgcgcaactc ctcggcgaag ccgtcgggtcc cttcggggcg cgccgtatga ccgcgcggcc
27180
cgtccggggc ggctgccggg gccaggagcc gacatgcggg tgatgatcac ggtgttcccg
27240
gcgcggggcg acttccctgcc gctgggtgcc tatgcctggg ccctgcagag cgcgggccac
27300
gaggtatgtg tcgtggcgcc cccgggctat cccaccgggg tggccgaccc cgacttccac
27360
gaggccgtca ccgcggccgg cctgaagtcg gtgacctgcg ggcagccgca gccgctggcg
27420
gtccacgacc gcgacgaccc cggctacgcg gcgatgctgc cgaccgcggc ggagtcggag
27480
cgctacgtgg cgccctcgg gatcagcgag aaggagcgcc ccacctggga cgtcttctac
27540
cacttcacct tgctggcgat ccgcgactac catccgcgcg ggccgcggca ggacgtggac
27600
caggtgatcg agttcgccc gatctggcag cccgatctgg tgctgtggga cgcttggttc
27660
ccctcggggc cgatcgcgcc gcgggtcagc ggcgccgcgc acgcgcgggt gctcgtagcc
27720
cccgactaca ccggctgggt caccgagcgg ttcgccgcgc cgggccccgc ggcgggggccc
27780
gacctcctgg ccgagacgat gcggccgctg gccgagcggg acggcgtgga ggtcgacgac
27840
gatcttctgc tcggacagt gacgggtcaat ccgttcccgg cgccgatgaa cccgccgacc
27900
~~cggctcacga acgttccggg gcgtacgtg ccctacaccg gtgccagcgt catgcccgcg~~
27960
tggctgtacg cgcggccgct gcggccgcgg gtggcgctgt cgctcggagt gtccgcgcgg
28020
gcgttcctca aggggtgactg ggggcgctacc gccaaactgc tggaagcggg cgcgagactg
28080
gacatcgagg tgatcgccac gctcaacgac aaccaactgg cggagagcgg gccgctgcgc
28140
gacaacgtcc acaccctcga ctacgtaccg ctcgaccagt tgctgcccac ctgctcggcc
28200
gtcatccacc acggatcgac gggcaccttc gccgcggcga gcgcggccgg gctgccccag
28260
gtggtctgcg acaccgacga gcccctcctg ctcttcggcg aggacacccc cgacggcatc
28320
gcgtgggact tcacctgcca gaagcagctc accgcgacgc tcacctcccg cgtggtcacc
28380
gactacgggg cgggggtgcg cgtcgaccac cagaagcagt ccgccggaca gatccgtgag
28440
caactacgca ggggtgtcac cgaaccttcc ttccgcgagg gcgctcgacg gatccgggaa
28500
gaccggaatt ccgccccag cccggtcgaa ctcgatcgc tcctggtaga actgacgaag
28560

cgtcatcgcc gtgacaagga ggcggaaccga ttaggatgct ggtgacgggc ggagcgggtt
 28620
 tcacggctc gcagttcgtg cggggccacac tgcacggcga gctgccgggt tccgaggacg
 28680
 cccgggtgac ggtcctggac aagctgacgt actccggcaa tccggccaac ctcacctcgg
 28740
 tcgcggccca tccgcggtac accttcgtcc agggcgacac cgtcgaccgg cgcgtcgtcg
 28800
 acgaggtggt cgccggccac gacgtcatcg tccacttcgc ggcgagtcg cacgtggacc
 28860
 gctcgatcga caccgccacc cggttcgtca cgaccaacgt gctcgggacc cagacgtcgc
 28920
 tggaagcggc tctccggcac ggggtcggcc ggttcgtgca cgtgtcgacc gacgaggtct
 28980
 acgggtcgat cgcctccggc tcatggaccg aggacacccc gctcgccccc aacgtccctt
 29040
 acgcggcgtc gaaggcgggt tcggacctga tggcgctcgc ctggcaccgc acccggggcc
 29100
 tggacgtcgt cgtcacccgg tgcaccaaca actacgggtc ctaccagtac cccgagaagg
 29160
 tgatcccgt cttcgtcacc aacatcctcg acggcttgcg ggtgccccctg tacggggacg
 29220
 gcgcccaccg ccgggactgg ctgcacgtgt ccgaccactg ccgggccatc cagatggtca
 29280
 tgaactccgg ccggggccgg gaggtctacc acatcggcgg cggcaccgaa ctctccaacg
 29340
 aggaactcac cggcctgttg ctcacggcgt gcggcaccga ctggtcctgc gtggaccggg
 29400
 tggccgaccg gcaggggcac gaccgccgt actcgtcga catcacgaag atccggcagg
 29460
 aactgggcta cgagccccctg gtcgccttcg aggacggcct ggccgcgacg gtgaagtgg
 29520
~~accacgagaa ccgttcgtgg tggcagccgc tgaaggaagc ggccggcctc ctggacgccg~~
~~29580~~
 tcggctgacg gcagccaccg ctaggaacac ccaggaag gagccacctc cgtgacagca
 29640
 gtcaaggagc cgacgtcccg cgcaggacgg cgggagtggga tcgtctcgt cgtcctctcc
 29700
 ttgcccacga tgctgttgat gctggacatc aacgtcctca tgctggcctt gccgcagttg
 29760
 agcgaggatc tcggcgcgag cagcacgcaa cagctgtgga tcaccgacat ctacggattc
 29820
 gcgatcgccg gcttcctggt gaccatgggc accctcggcg accggatcgg ccgcccaggg
 29880
 ctctgctcg ggggcgcggc cgtcttcgcg gtcgtgtccg tcgtcgccgc gttctccgac
 29940
 agcgcgcgga tgctcgtcgt cagccgcgcc gtgctcggcg tcgccggggc cacggtgatg
 30000
 cctcgcgcgc tcgcgctcat cagcaacatg ttcgaggacc ccaaggagcg gggcaccgcc
 30060
 atcgccatgt gggcgagcgc catgatggcc ggagtcgccc tcggggccgc cgtcggcggc
 30120
 ctggtcctcg ccgcgttctg gtggggatcg gtgttcctca tcgccgttcc ggtgatgctg
 30180

ctggtggtgg tcaccggccc cgtgctgctc accgagtccc gcgacccgga cgccggacgg
 30240
 ctggacctgc tgagcgcggg gctctccctc gcgaccgtgc tgccggtgat ctacggactg
 30300
 aaggagctgg cccggaccgg gtgggacccg ctcgccgccc gcgcggtggc cctcggcgtg
 30360
 atcttcggcg cgctgttcgt ccagcgccag cggcggttgg ccgaccccat gctggacctc
 30420
 ggcctcttcg ccgaccgcac cctgcgggcg ggtctgacgg tcagtctggc caacgccgtc
 30480
 atcatggggc ggaccggact gatggtcgcc ctgtacctcc agacgatcgc cggtcactcc
 30540
 ccgttggccg ccgggctgtg gctgctgata ccggcctgca tgctcgtcgt gggcgtagac
 30600
 ctgtcgaacc tgctggccca gcggatgccc ccttcccggg tgctgctggg gggactgctg
 30660
 atcgcgccg tcggacagct cctgatcacc caggtggaca ccgaggacac cgccctcctc
 30720
 atcgcgccca ccacctgat ctacttcggc gcctcaccgg tggggccgat caccacgggc
 30780
 gcgatcatgg gagccgcgcc cccggagaag gcgggtgccg cctcgctcgt gtccgccacc
 30840
 ggcggcgagt tcggagtggc gctcggcatc gcgggcctgg ggagtctggg caccgtcgtg
 30900
 tacagcgccg gggtcgaggt gccggacgcg gccgggcccg ccgacgccga cgccgcgcag
 30960
 gagagcatcg ccggcgccct gcacacggcc ggtcagctgg caccgggcag cgccgacgcc
 31020
 ctgctggact ccgcgcgcgc ggccttcacc agcggcgtgc agtccgtcgc cgccgtctgc
 31080
 gccgtgttct ccctggcgct cgccgtcctc atcggcaccg ggctgcggga catttccgcg
 31140
~~atggaccacg ggcacggcga ggaaccggcc gagaacgacg ctcaaccggc cacatgagcg~~
~~31200~~
 cacttccgga gatgcaacgg ccgccgtcga ggtatgagga tcaccttccg gggcgcacct
 31260
 gcacggcaac ggaggcgtag tggagtactg gaacagcacg gcggagacca tgccccgcca
 31320
 ggaactcgaa cagtggaagt ggcgcaggct ccaggccgcc atggaccacg ccagaaggct
 31380
 ttgcgccctc tggcgggaaac gactccccga gaacatcacc tccatggcgg actacgcggc
 31440
 gcgggtgcct ctctcgcgca aggccgacct cctcgccgcg gaagccgcgt ctccccctta
 31500
 cggcacctgg ccctcgctgg atccggcgct cggagtgcgc catcaccaga ccagcggcac
 31560
 cagcggtaac cccccatcc ggacgttcga caccgaacgc gactgggcct ggtgcgtgga
 31620
 cacgttctgc acggcgctcc acagcatggg cgtgcgcccc caccacaagg gtctgggtggc
 31680
 gtteggctac gggctgttcg ccggtttctg gggcatgcac tacggcctcg agcgcattggg
 31740
 cgccacggtc atcccggccc ggggcctcga ctcccgtccc cgggtacggc tgctgggtcga
 31800

ctaccagatc gaggtgctcg gcctcacacc gagctatgcg atgcggctga tcgagacggc
 31860
 ccgcgagatg ggcacgcacc tcgcccgcga ggctaacgtc cagatcatcc tggccggggc
 31920
 ggagccgcgc tccgcgttca ccacccgcac catcgaggag gccttcggcg cccgggtctt
 31980
 caacgccgcg ggcaccactg agttcggggg ggtgttcattg ttcgagtgcg ccgcccggcg
 32040
 cgaggcctgc cacatcatcg aaccctcgtg catcgaggag gtgctcgacc cggtgacgga
 32100
 acagcccgtc ggctacggcg aggagggcgt ccgagtcacc accgggctga accgtgaggg
 32160
 gatgcagctc ttccggcact ggaccgagga cgtcgtggtc aagcggcccc acaccgagtg
 32220
 cggctgcggc cggacgtggg acttctacga cggcggcatc cttcggcgcg tggacgacat
 32280
 gcgcaagata cgcgggggtct cgatcacccc ggtgatgatc gaggatgtgc tgcgcggctt
 32340
 cgacgaggtg aacgagttcc actcgtccat ccggaccgtc cgcggactcg atacgatcca
 32400
 cgtcaaggtc gaggcgggag acatctcggg tgaggcggcc gagagcctgt gcggccgcat
 32460
 caccgaggag ttcaagcgtg agataggcat acggccccag gtggagctga cccccgcggg
 32520
 cagcctcccc cgatcgaagt ggaaggcggc acgacttcat gacgagcgcg aactcgcccc
 32580
 tcaggcctga gcaggtggag cagctcctgg tgagctaccg gagcctgggc ctgctggagc
 32640
 agagctgcgc ggtcccggcc gtgctcgccg cggtcagggc cgcccgtgcg gaactccgta
 32700
 tcgcccctgga cggccagggc gtggagttcg agtactaccg ggggcacgac gacagcctcg
 32760
~~tggcctgaac ccacccccgg tccgccgggt cagaagaaag ggagaccggt gccccacggt~~
 32820
 gcagagcgcg aagcgagccc ggccgaggag agcgccggca cccggccgct gaccggcgag
 32880
 gagtatctgg agagcctgcg ggacgcgcgg gaggtgtacc tcgacggcag ccgcgtcaag
 32940
 gacgtcaccg cgcacccgcg gttccacaac cgggcccgga tgacggcccc gctgtacgac
 33000
 agcctgcacg accccgccc aagagcggtc ctgacggcgc ccaccgatgc cggtgacggt
 33060
 ttcacccacc gcttcttcac cgcaccgcgc agcgtcgacg acctggtcaa ggaccaggcc
 33120
 gccatcgcat cctgggcgcg caagagctac ggctggatgg ggcgcagccc cgactacaag
 33180
 gcgtcgttcc tcggcacgct gggggccaac gccgacttct acgagccctt cgcggacaac
 33240
 gccggcgct ggtaccggga gtgcgaggag aagggtgctgt actggaacca tgccttcctt
 33300
 caccgcggc tcgaccgctc gctgcccgcg gacgaggtgg gcgacgtctt catccacgtc
 33360
 gagcgggaga ccgacgcggg cctggtggtg agcggggcca aggtcgtcgc gaccggatcg
 33420

gccctacccc acgcgggcggtt catctcgcac tggggacttc ccatcaagga ccggaagttc
 33480
 gccctggtgg ccaccgtgcc gatggacgcg gacggcctca aggtgatctg ccgtccctcc
 33540
 tactccgcaa acgcgggcgac cacgggcagc ccgttcgaca acccgctgtc ctcacggctg
 33600
 gacgagaacg acgccatcct cgtactcgac caggtgctga tcccctggga gaacgtgttc
 33660
 gtctacggca acctgggcaa ggtacatctc ctcgccggac agtccgggat gatcgaacgc
 33720
 gccaccttcc acgggtgcac ccggctcgcc gtgaagctgg agttcatcgc cgggctgctg
 33780
 gccaaaggcg tggacatcac cggggcgaa gacttccgcg gtgtgcagac ccggctcgga
 33840
 gaagtccctgg cctgggcgcaa cctcttctgg tctactgtcg acgcgggcggc ccgcaacccc
 33900
 gtcccctgga agaacggcac gtcctgccc aaccctcagg cgggtatggc ctaccgctgg
 33960
 ttcattgcaga tcggctaccc gcgggtcctg gagatcgccc aacaggacgt ggccagcggc
 34020
 ctcatgtacg tcaactcctc cacggaggac ttccgcaacc ccgagaccgg cccctacttg
 34080
 gagaagtacc tccggggcag cgacggcgca ggcgccgtcg agcgtgtcaa ggtgatgaag
 34140
 ctgctgtggg acgcggtggg atccgacttc ggcgcccggc acgaactcta cgagcggaac
 34200
 tactccggga accacgagaa cacccgatc gagttgctgc tgtcgcagac ggcgagcggc
 34260
 aaactggact cgtacatgga cttcgcccag gcatgcatgg acgagtacga cctggacggc
 34320
 tggaccgctc ccgacctgga gtcgtttcac gcgatgcgtt ccgcctcccg cgaccttctc
 34380
~~ggagggctgt agttccccga cgtgtactg cggcccccca tccggggggc gcagtaacac~~
 34440
 gtcggggcgg ctggtgctca gccgcgcagg aatccgatga gtcggggggc gagcttcttg
 34500
 ggcgccatgg cgacggcacc gtggttgagc ccgttcaggg tgcggtggct cgcgtcgggg
 34560
 aggactccgg tgagttcctt cgcggcacgc tggaaaccgt cggggctctt ggaaccggtc
 34620
 agcaccaggg tcggggccga cgcgcgcgac cacggctcgg cggggagcgg cttgccctgc
 34680
 tgggtgtcgc ccatcacgc gatgtcgtag ggaagcgtgt tggccagacc cttgaggttg
 34740
 gaccagacac cgggcatcag gcgcatggcg ccgaccatga aggagggcat gccctgtgcc
 34800
 ttgaccatga aggccctgac cgcgtcgtg cgtcggctct ccgccagaag gctgtcgatc
 34860
 tgaccgccga agccggcggg cgggccgaag ccgtccgagg tgacggagaa cggcggtcgc
 34920
 tagaccgcga gcttgttcac cttcaggccg gcggcggcgg ctgcagggc gagcaccgcg
 34980
 ccggaagagc tgccgaacag ggaggccgaa ccgccgacct ggtcgatcag cgcgcgatg
 35040

tcctcgatct cgcgctcgac cgcgtacgcc ggaccgtcgg cgctggcgcc gcggccccga
 35100
 cggtcgtagt tgacgaccgt gaagtgcctg gcgaggagac cggcgagctt cttggcgctg
 35160
 gagcggtcgg ccaaggcgga ggccaccagg atcaccgccg gcccttcgcc cgacttgctg
 35220
 aaggcgatcg tggtgccgtc ggccgatacc gtcgttgatt ccaccttggc tgctttctca
 35280
 cgggttgaag acatagcttc cctcagatca cattgtgggg cgtgctgccg acagtggaga
 35340
 ccggcgctcg gaggaaggt aatcggctct gccagaattg ggggttcggg agggcacgcc
 35400
 gaccgctgca cgacggcgcg ccccgacctt ccggacattg tcgtgccctc agatgtgttt
 35460
 cgcattctca ggagtgcctc gtgatccgtg aggtgagaaa gggacggtgg tccggtcagt
 35520
 cgttgcccg cggtgtgttc tggtaagcgg ccagacgcca ctgcccgtcc tgttcgacgg
 35580
 ccagccagga ggcccggacg gcgccgtcgc cgctcgcttc ggtctcccc gggcgagga
 35640
 tgccgccctc ggtgatgagc agggcgatgc cgctcgccgag caggcgcgcg tcgatggggc
 35700
 tgccgatgac acgggtgccc ttgtacgggc ccgcgaaggc ggccgccatg tgggtgcgga
 35760
 tgttctcgcg gcccttgcgg aagaggccgg ggaggatcat cgtcccgtcc tcggcgaaga
 35820
 cgtcggcgaa ccggtcggcg tcgtggtcgg ccaggcggc cacgatgcgc gccggcagag
 35880
 cggtaccgc tgccagggcg gcgtcgggag cggaggtggt cgagtcggtg ctggtcatat
 35940
 cgcggttccc gtccgttggt tggcggttcc ggcacggccc gcagccctgc ccgagcccga
 36000
~~cgctggcagg cggccccgtc atcaggcatc tcctggctg cggccacgc cagtcacttc~~
~~36060~~
 acggccagaa caagtcgcgc attctggaag aagctgaggc ccgcgacctg gtgcgacgat
 36120
 ctgcggtgtc acggagttcg cacacgttta cgcacggagg ctcgatgccc gctgtcaatg
 36180
 gatcggtgca gtcaggccag tcgcaccgac gctccgtcgt ggcgacggtg gtgggcaact
 36240
 tcgtggagtc gttcgactgg ctgcctacg ggctcttcgc tcctctcttc ggggtcagt
 36300
 tcttccccctc gtccaaccag ttcacctccc tgctcggcgc gttcgcggtc ttccggcacgg
 36360
 gcatgctctt ccggccgatc ggcgggggtcc tgctgggccg cctcgccgac cggcgcggcc
 36420
 ggcgccccgc cctgatgctg gcgatcggac tgatgaccgg cggctcgacc ctgatcgccg
 36480
 tcgtccccac ctacgagcac atcgggatcc tcgccccgct gcttctgctg ctgccccggc
 36540
 tcgcccaggg agtctcctcg ggcggggaat ggacagcggc ggccacctac ctgatggaga
 36600
 tcgcgccgaa gaaccgccgg tgcccttaca gcagcctctt ctccgtgacg accatggcgg
 36660

gcccttcgt cgcacgctg ctgggcgcgg gcctcggcgt gtggctggga accgcgacga
 36720
 tggaggcctg gggctggcgg gtgccgttcc tcctcggcgg cgtcttcggc gtgacactgc
 36780
 tgttcctgcg ccgtcggctc accgagaccg aggtcttccg ccgggaggtg cggccccggg
 36840
 cccggcgcgg ctactgggc cagctgatcg gagccaccg ccccaggtg ctgctggccg
 36900
 tgatgctggt ggccggactg ggcgatcag gcggaacgtg gtcgaccgcg gtcccggcga
 36960
 tgggccaccg tctgatcggc tcgcagacga tgttctgggt ggtggtctgt gtgaccggct
 37020
 cggatcactt gctgcaggta cccatagggc tgctcgccga ccgggtggaa ccgggcaggt
 37080
 tcctgatcgt ctccagcgtc gtcttcgccg ctgtgggctc gtacgcctac ctacacgtcc
 37140
 aggactcctt cgcgagcctg gcgttcacgt acagcaccg agtgatcttc ctcggtgcg
 37200
 tcaccatggt gctgccgaag atgctctcca gaatcttccc tccgcagata cgcggcctgg
 37260
 gcatcgggct gccgcacgcc tcgaccaccg cactctcggg cggggcgggg cactgctgg
 37320
 ccgcctactc cgacgagcga ggccctcggg gctgggttcat cgcgcgcgtg atggccgcgg
 37380
 tcctgctcgc ctggccggcc accctgtggg agcgacggct gttccgcgcc cggacggccc
 37440
 cgggaagcga gccgggtccc gaatccgccg tcgcccgcgc cgtcgggtga ccgtccgcac
 37500
 ttctgcatcc cgtccggcac cgagcgccgg cgacctccc gactgagagg ttgacatcat
 37560
 gacgacgtcc gacaccaccg accggtccca ggacggcgtg ccgccgtct cttccacca
 37620
 ggagtctctg tgcattgttc acagcgggaa ~~cgacggcgcc~~ ~~gacgtggggc~~ cgttcggccc
 37680
 catgtaccac atcgtcggag cctggcggct gaccggcggg atcgacgagg agaccctgcg
 37740
 cgaggcgctg ggtgacgtcg tcgtgcgcca cgaggccctg cgcacatcgc tggtcgcga
 37800
 aggtggcacg caccggccgg agatcctgcc tcgggggccc gccgcgctgg aggtccgtga
 37860
 tctcggcgac gtcgacgagt cggagcgggt gcggcgcggt gaggaactgc tcaacgaggt
 37920
 ggagtgcacc ggtctgagcg tcgaggagct gccctgctg cgggcccgtg tcggacgctt
 37980
 cgaccagaag gacgcggtgc tggctctcat cggccaccac accgccgcgg acgctgggc
 38040
 catgcacgtc atcgcccgcg acctgctcaa cctgtacgcc gccaggcgcg ggaacccggg
 38100
 tccccgcctc cccgagccgg cccagcatgc cgagtctgcc cgctgggagc gcgaggcggc
 38160
 cgaggcaccg cgggtcgcgg tctcgaagga attctggcgc aagcgctcc agggcgcgcg
 38220
 gatcatcggg ctggagacgg acataccgcg ctcggcgggg ctgccaagg gcaccgcgtg
 38280

gcagcgcttc gccgtacgcg gggaactggc cgacgccgtg gtggagttct cacgggcccgc
 38340
 caagtgtcc ccgttcatga ccatgttcgc cgcctaccag gtgctgtgc accgcaggac
 38400
 gggcgagctg gacatcacgc tgccgacctt ctccgggggg cgcaacaact cgcggttcga
 38460
 ggacaccgtc ggttccttca tcaacttctt gccgctgcgt accgacctct ccggatgcgc
 38520
 atccttccgc gaggtcgtgc tgccgacccg caccacctgc ggagaggcgt taccacacga
 38580
 gctgcccttc tcccggctga tcccggaggt gccggagctg atggcgctcg cggcctccga
 38640
 caaccaccag atctccgtct tccaggccgt gcacgcgccc gcgtccgagg ggcccagaca
 38700
 ggccggggac ctgacgtact cgaagatctg ggagcggcag ctgtcgcagg cggagggctc
 38760
 cgacatcccc gacggggtgc tgtggtcgat ccacatcgac ccctcgggct ccatggccgg
 38820
 cagcctcggg tacaacacca accgcttcaa ggacgagacg atggcggcct tcttgcccga
 38880
 ctacctcgac gtgctcgaga acgcggtggc ccggccggac gcccccttca cctcctgaga
 38940
 cagttccggc ggccggcgaac ccgcccgaag aaaggaaagc cagtgtccac cgtttccgac
 39000
 acagcggccg gctcctccct ggaggagaag gtcacccgga tctggacggg tgttctcggc
 39060
 acgtccggtg aggaaggcgc gacgttcacg gagctcggag ggcagtcggt ctcgcccggt
 39120
 cgcctcgcca cgcgtatcca ggaggagctc gacatctggg tcgacatcgg cgtcctcttc
 39180
 gacgacccgg atctgcctac cttcatcgcg gcggtcgtcc ggacggccga cgcgcggggc
 39240
 ggcgagggct ccggaacgca gtgagactcg ~~cggggegccc~~ ~~tctccccgcg~~ gcgcccgggt
 39300
 tcacatggct gaggcggttc acccgggtacc ggggtgaaccg cctcagccat gtgaaaccgg
 39360
 gcctggtcag cgcagctgga tgtccgtctc ccgggcgatc gcccgaggga actcgcccg
 39420
 ggacagcgcg tcggcgacca gctcgatgtc gtcggccatg taccggtcga cgcacagcgt
 39480
 cgggaaccagc cggcgacacc cttcgtacgt ggccttcgcc gccggggtca agccgtcgaa
 39540
 ccggccggag atgtcgaccg cctggggcggc ggccaggtag tccaccgga ggatcttgtt
 39600
 gttgttcgac aggacccggc gggcggttgc ggccgagatc agggccatgc tcaccacgtc
 39660
 ctggttgtcg ccgttggacg ggacgctctg ggtgctggcc gggccgatcg tccggttctc
 39720
 ggccaccagt gcggtggccg ggtactgggc gccggcgaat ccgctgtgca gccccgggtc
 39780
 cccggagacg aggaactccg ggaggccgta gctgaggtgc cggttcagga cccggttgat
 39840
 ctgccgctcg gccaggacgc cgagctgggt gagcgcgatg gtcacgaagt ccatcgcgaa
 39900

cgcgatcggc tgaccgtgga agttcgcccc gtggaagatc tccttgccct cgaagaagag
 39960
 cgggttggtc ttggccgagt tgagctcgat gcgcagcttg tgccgcgcgt ggtacaaggt
 40020
 gtcgcgcacc gccccgacga cctgggggat ggcccgacgc gagtaggcct tctgcaggta
 40080
 gatctccgag cgctggacgt ccttgccggc ctcttggtcc ttctggagtt ctcggcgcag
 40140
 gtcggcgtgc tcgaccgtca gtccgctgcc ccgcacatcagg gcccgcatgt tggcggcggg
 40200
 gtcgatctgg ccctcgtgcg ggccgggctat gtcgtgcccc tccgcgagga aggggctggt
 40260
 cgatccgcgt accgcctcga tgagcagagc cgtcacgacg tcggcctgct gggcctgctc
 40320
 caggggccgt ccgacgacca gggagcccag accggtcacg ccggacgtgc cgttgatcag
 40380
 tgcgaggccc tccttgaagc gcagttcgag cggctcgatg ccccgctcgg ccagcacctg
 40440
 ggccgtctcc accggccgtc cgtcgcgcag gacgtagccc tctccgatga ggggtgctgc
 40500
 gacgtgggag aggggagcca ggctcgccgt cgccccgagt gaccgatct cgggtatggc
 40560
 cggggtgatg ccctcgttca ggtactgcgc gaggcgcttc aggatgatgg ggccgaccgc
 40620
 ggagtggccc ttggcgaggg tgttcagccg ggccggcgacg atcgcccgcg cctcgtctc
 40680
 ggccaacagc ggaccgactc ccgcgctgtg gctacggacg agattggtct gcagttcgac
 40740
 ttccttcgac ttgtcgacct gcatgtagat catctcgccg tacccgggtg taccgccga
 40800
 gatggggatg ttctgttcgg cgatcccttc gaagatctcc cggctcttct gggccttcgc
 40860
~~gatggattcg gccggtacgt cgaccgtcgc gcgttctctc gcgacgcggc gtacggcttc~~
~~40920~~
 gacggtcagg gtctcgccgt cgacggaaac cgggacgacg tcggtctcga cttgagtcaa
 40980
 tgccatcact ccattgggtag cggccgagggc cgggtgtacga caggtcaggg ggtgggttcg
 41040
 tgaggcgagg ctcagcgggt gagccgggag cgggtccacct tccccgcggc gttgcgcggc
 41100
 aggcgtgaag tcaggcgggt gaagacggcg ggcagtgcga gggggccgaa ctggccgcgc
 41160
 agatgggaac gccaggcccc gatgtccgcg cgcacgtcct cccggccctc tccttggtgc
 41220
 accacgtaca cggcgaggcg ggtcaccagg ccctggccgt tgacgtgggg gaggaccgcg
 41280
 cactccagga ccgaggggtc acggttcagc gcggcctcga tctcgggtgag ttccaagcgg
 41340
 tttccgaaca gcttgacctg gaagtccttg cggccccgga attccagggc tccgtcgaac
 41400
 cgtacccgcg ccagatcccc ggtccggtag caccggtcac cgtccggggc gaggccggcg
 41460
 aggggcgcga acagcgcgct gtggtccggg ccgccctcga cggcgagata acccggcgctc
 41520

acgtacgggg agcggatcac cagttcgccg gtgacgccgg cggggctcgg ccggtcgtec
 41580
 gcgtccacga cgagtacctg gcggccgggg agcgggtacc cgatcggggc cgggcccggtg
 41640
 accggcccgg tgatctcgtg ccaggtcgcg gcgatcgtct cgggtggggcc gtagagggtg
 41700
 atcaggcggg tccggggcag ggccgcgcgc agtccgtcca cgagttcgcc gggcagcgcc
 41760
 tcgcccata ggagcaggtg gccaggggtg ccgggccgat cgcccgggtc ggaggcgggtg
 41820
 atcactccca ggaggtcccg ggcgaagctg ggcacgggtc ggagatgagt gatccgctcc
 41880
 tggacgagcc acggcaccag cttgtcgggg ttcaccctga cgcgctccgg caccggacac
 41940
 agcgtcccgc cggccacgag cgtcgcgaag acctcggcca gcgccgggtc gtgctccggg
 42000

<210> 2
 <211> 21185
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: cDNA

<220>
 <223> orf; relative position 42611-41052

<220>
 <223> orf; relative position 38983-39264

<220>
~~<223> orf; relative position 43945-46023~~

<220>
 <223> orf; relative position 46167-47171

<220>
 <223> orf; relative position 47227-48485

<220>
 <223> orf; relative position 48610-49714

<220>
 <223> orf; relative position 50350-51390

<220>
 <223> orf; relative position 51420-52341

<220>
 <223> orf; relative position 52341-54074

<220>

<223> orf; relative position 54230-55379

<220>

<223> orf; relative position 56027-56881

<220>

<223> orf; relative position 56928-57730

<220>

<223> orf; relative position 57834-58304

<220>

<223> orf; relative position 58440-60091

<220>

<223> orf; relative position 60092-60622

<220>

<223> orf; relative position 60940-62020

<220>

<223> orf; relative position 62045-62899

<220>

<223> orf; relative position 62788-63164

<400> 2

agcgccgggt cgtgctccgg ggagaccac tgcgccacce ggcgcgccgg ccccatcgcg

60

aaccgttcgc ccatccagcc cgcaactgg cccagcgcg catgcgactg ggcgatcccc

120

ttgggccgcc cggtcgaacc cgaggtgaac gccacgtagg ccaggtctgc caggccccgc

180

~~ccgcegggg tcgtcgctc cgggccggcg gcgggtcgag ggccgagcac agaggaggcg~~

240

tccagcaggg tggcgcccg ttcaccggcg taccagagcg ccagcggatc ctctcgcgga

300

tcgccgtcga ggaccaggca cgccggggcg agatcgctga gcatcgaccg gtgtcgttcg

360

cccgcgccgt ccggagcgaa ccacgccagg tgggcgcccc cctccaggac tcccagcagc

420

accgcgatcc ggcgggcgcc cggctgcatc cgcaccgcca ccggcgagcc gtgccccgcg

480

ccggcccgcg tgagggccga ggcgacgcgg gccgcgtccg cggtcagtgc ggcggtcagt

540

tcggcgtagc ttgtgcgcgt gccgccgaac gagacggcga caccgtcgtg ttccgcgtgg

600

cggcggaccg aggcgtgcac cggccgcgtc atgtccccgc cggacgcccc gcgggtccgaa

660

gcgcgcaggg cgtggtcccc gtggcggtcg tcgtccagcg gcagagcgcc cacgggtgtg

720

tccggatccg tggtcgcggc ggtcaggagg acggccagct gatccagcat ccgccggggc

780

gaagegggct cgaacagagc ttcgcgggtac tccaggtagc cggtagaccga gggcgcggtg
 840
 tcctgcagca ccagggtcag gtcggcgggcg gcagtgccgt tgtgcacgga cagccgcctc
 900
 acctcggcgc ctggtatccg caggccccggc cgctcctcgt ggacgaacac ggcgtcggcc
 960
 ccctcgatcc ggcacggccc gggggccggg gccggcgctcg tgtgcagcag ctcccgggaag
 1020
 gcggtggccg gcgtgccgtc gtctgttcg gcgtagcgt ggaccagggc tcggaatccg
 1080
 gccagcacca cggccgcggc ggtgaccct tccgcttcgg cgagccgggc cgtacggaag
 1140
 ccgaggtccg gactccagcc gaaggcgacg gtgctccccg cgtgcgaggg caggtgcggg
 1200
 cggttccggt cggcgggcag gacctgtccg gaggcggtcg ccgaagactc ctgcctccg
 1260
 ggcgccccgg gcgtttgcgg cgcgggcgca gtgggaggcc ggccgccggt ggtgacggcg
 1320
 aggtacgcgt tcgacaacgc ggccggcagg ggcccggacg gcccgtcca ggctccggag
 1380
 tgcgaggcca ccaggagaag caggtgcgcg cgtgggcctc tgcgggcgat gtggagccgt
 1440
 gcgggcgcgt caccctcggc gaagggacgg gccgcccagc gagcgcagag ttcctcctcc
 1500
 ccgcactcct cgtcggcact cggcccgtcc acggcgggcc cgtctccggc ggcggccccg
 1560
 caggccgtcc gcagggcctc caggtcgagt ccgccgtca cgtggtaggc cgcgtacggg
 1620
 tgcaacaccg cagatccgga ggccggcgaa ggcccccggt ccggctcgggt cacagtcacg
 1680
 tcattcgcca cgacgcccac cttggggcgg cggcgcacag gacgcttctc cttgagtgcg
 1740
 gagctccgcg tacggcgccg aagcgttcgg tcaaaccttg ~~ttcgaccaac~~ tgcgcaatct
 1800
 ggaagttgac gtcttcagg tggagttggg aacgatggag gccccgccg gccgcgtcgg
 1860
 aacggccgtg cagtgcggcc ctctccaaca ctcccggcca tcgcggaatc cgagacgtgc
 1920
 ccgaaggagc ccccttgca agcctggttc aagcgcacca gtggtgtgcc cggtagacaga
 1980
 cgtggaaagt ggctggctct ggccgcctgg ctcatcatcg cgatggcgct gggcccgtg
 2040
 gcggggaagc tcgccgacgt ccaggactcc agcgccaacg ccttccttcc gcgcagctcg
 2100
 gagtccgga agctgaacaa ggaactggag aagttccgcg ccgacgagct gatgccggcc
 2160
 gtggtggtct acagcgccga cggctcgctg cccgccgagg ggcggggcaa ggccgagaag
 2220
 gacatagccg cttccagga gctggccgcc gagggcgaga aggtcgaagc gccctggag
 2280
 tcggaggacg gccaggcgct catggtcgtc gttecgctga tcagcgacgc cgacatcgtc
 2340
 gccacgacga agaaggtccg cgatgtcgcg gacgccaacg ccccccggg cgtcgccatc
 2400

gaggtgggcg ggcccgcgcg gtcgacgacc gacgccgccc gcgctttcga gtccctcgac
2460
tccatgctga tgatggtcac cggccttggtg gtcgccatcc tgctgctgat cacctaccgc
2520
tccccatcc tgtggctgct gccctgctc tccgtcggct tcgcctccgt gctgaccag
2580
gtcggcacct acatgctcgc caagtacgcc gggctgccgg tcgaccgcga gagctccggc
2640
gtcctgatgg tctcgtggt cggtgtcggc accgactacg ccctgctgct catcgccgc
2700
taccgtgagg aactgcgccg cgagcaggac cggcacgtgg ccatgaagac cgcgttgca
2760
cggtcgggccc cggccatcct ggctcggccc ggcaccatcg ccatcggcct cgtctgcctg
2820
gtcctcgcgg acgtcaactc ctcccgtcc atgggcctgg tcggcgcgat cggcgtggtc
2880
tgcgccctcc tcgccatggc caccatcctg cccgcgctgc tggatcctc gggccgctgg
2940
gtgttctggc ccttcgttcc ccgctggacg ccggagtcgg ccgcggcccc cgaggcaccc
3000
gcgtcccaca gccgctggga gcgcacggc tccgtcacgg ccgccggccc gcgccgcgcc
3060
tgggtgctgt ccttgccgcg gacggggctt ctgcacctca gttccctcgg cctcgacatg
3120
ggactcacc cagagcgaact gctccagacg aagcccagat ccgtcgtcgc ccaggagcgg
3180
atctccgccc actaccgctc cggctcctcc gaccccgcca ccgtcgtcgc acccagcgcg
3240
gacgtggccc aggtccgccc ggccgccgag gggaccgacg gagggtctc cgtccaggac
3300
ggcccacca ctcccgacgg agagctgacc atgctgtccg tgggtgctgaa ggacgttccc
3360
gacagcgcg gggccaagga caccatcgat ~~gcactgcccc~~ ~~acaacacgga~~ tgctctcgtg
3420
gggggtacga cggcccagag cctggacacc cagcgcgcct cgggtccgtga cctctgggtc
3480
accgtccccg cggctcctgt ggtggctcctg ctgcctcctga tctggctgct gcgctcggtc
3540
accggaccgc tgatcatgct cggcacctg gtcgtgtcgt tcttcgcggc cctgggggcg
3600
tccaacctgc tcttcgagta cgtgatgggg caccgccggc tcgactggtc ggtgccgctt
3660
ctcgggttcg tgtacctggt cgcctcggga atcgactaca acatcttctt catgcaccgg
3720
gtgaaggagg aggtcgtctt gcacggccat gccaaaggcg tgctcaccgg cctgaccacc
3780
accgggggcg tcatcaccag tgccggcgtg gtccctggccg cgacgttcgc cgtcatcgcc
3840
acactgccgc tgggtccgat ggcccagatg ggtgtcgtgg tcggcctggg cattctgctg
3900
gacaccttcc tcgtccggac gattcttctg ccggccctgg cgctcgatct ggggccccgg
3960
ttctgggtggc cgggcgcgct gtcgaagacg tccggggggac cggcccccg cgcgaggac
4020

cgcacgtccc agcccgtggg ctgagacccg tcccgaacgag acccgtacgg cgggcgggccg
 4080
 gttccccccg gccgtacgac tgagcaaccc agaagatggg ccgcccgcga ccaggcggtca
 4140
 cgatggtggc ccaccggccg caggccgatc tcccggaagg aagcgccgtg ttgggcgatg
 4200
 aggacggcaa ggccgcccag ctgtgggtcga tggcgaacct gggtacaccg atggccgtgc
 4260
 gcgtcgcggc gaccctgcgc atcgccgacc acatcacggc cggagcgcac accgccggcg
 4320
 aaatcgccga agcggccgcc gtgcacgagg aatccctcga ccggctgctg cgctacctca
 4380
 ccgtccgggg cctgctggac cgtgacgggc tcggccggta cacgctgacc cccctggggc
 4440
 ggccgctgtg cgaggaccac cccgccggcg tccgggacct gttcgacatg gagggagcgg
 4500
 ggcggggcga gctgtcgttc gtcgacctgc tgcacagcgt acggaccggg aaggccgcct
 4560
 tccccctgcg ctacggccgc cccttctggg aggacctggc ggaggacccc cgccgcgcgg
 4620
 agtccttcaa ccggctgctc ggccaggacg tcgccactcg cgccccggcc gtggtggccg
 4680
 gcttcgactg ggcgagcacc ggtcatgtca tcgacctcg aggcggcgac ggctccctgc
 4740
 tgaccgcact gctgaccgcc tgtccgtcac tgcgcggcac ggtcctggac ctgcccgaag
 4800
 cgggtgcagc tgccaaggag tcgttcgccg tgtccggact ggacgaccgg gcgaacgcgg
 4860
 tcgcgggcag cttcttcgac gccctccccg ccggcgcggg cgcctacgtc ctgtccctgg
 4920
 tcctgcacga ctgggacgac gaggcgtccg tcgcgatcct gcggcgctgc gccgaggcgg
 4980
 cggggcagac gggatcgggtg ~~ttcgtcatcg agtcgaacgg ctcggcgggg gacgccccgc~~
 5040
 acacaggtat ggacctgcgc atgctgtgca tctacggagc caaggagcgc cgcgtggagg
 5100
 agttcgagga actcgccggc cgggcccggc tccgggtcgt cgccgtccac cccgcggggc
 5160
 cttccgcgat catccagatg tccgcggtct gaccgcccgg agccccggcc catcgcgggc
 5220
 cgggccacgg cagacaagga gagagcgtat ggccggcctg gtcatgtcgc cgggtggaggc
 5280
 gctcgacgcg ctgggcacgg tgcagggggc tcaggacccc tatcccttct acgaggcgat
 5340
 ccgcgcgcac gggcaggcgg tccccacgaa gcccggccgc ttcgtggtgg tcggccacga
 5400
 cgcgtgcgac cgggcgctgc gggaaccggc cctgcgcgtc caggacgcca ggagctacga
 5460
 cgctgtcttc ccctcggtgg ggtcgcactc ctcgggtccg ggggtcacca gctccatgct
 5520
 ctacagcaac ccgcccgatc acggccggtt gcgccagggt gtgagcttcg cgttcacccc
 5580
 gcccaagggt cgccggatgc acgggggtgat cgaggacatg accgaccggc tcctcgaccg
 5640

gatggcccgg ctcgggtccg gcgggtcccc ggtecgacctc atagccgagt tcgccgcccc
 5700
 gctgcccgtc gcggtgatca gcgagatgat cggctttccg gcgaaggacc aggtgtgggt
 5760
 ccgcgacatg gcctcccggg tcgccgtggc gacggacggg ttcaccgacc ccggcgcgct
 5820
 cacggggggc gacgccgcca tggacgagat gagcgccctac ttcgacgacc tcctggaccg
 5880
 tcgccgccc accccggccg acgacctggg caccctgctc gccgaggccc acgacggctc
 5940
 ccccgggcgc ctggaccacg acgaactgat gggcaccatg atggtgctgc tcacagccgg
 6000
 gttcgagacc acgagctttc tgatcggcca cggggcgatg atcgccctcg aacaacgggc
 6060
 gcacgcggcc cggctgcggg ccgaaccgca cttcgccgac ggctacgtcg aggagatcct
 6120
 caggttcgag ccgccgggtc acgtcaccag ccggtgggct gccgaggacc tcgacctgct
 6180
 gggcctgtcc gtaccggcgg gctccaagct ggtcctgata ctggccgccc cgaatcgcca
 6240
 tcccgccgcg taccgagc ccggccgctt cgaccccgac cgctacgcgc cccggccggg
 6300
 cgggcccggg gccaccagac cgctgagctt cggcgccggg gccacttct gcctcggcgc
 6360
 tccgtggtcg cggctggaag cccggatcgc gctgccgcgt ctgctgcgcc gcttcccga
 6420
 cctggccgtg tccgagcccc ccgtctaccg cgaccgctgg gtcgtccgcg gcctcgaaac
 6480
 ctttcccgtg accctcgggt cctgagcccc cgccggccgg aacacgtgac cgtcccggcc
 6540
 ggcgggtgcg cgccctctca gacgtacagg gtgttggggc cctgaccaca cagcaccgg
 6600
~~ccgtacagct ccaggttggg gctcgggttc atgcaggtgc agcgtgatgc tctgggcatc~~
 6660
 gctgcacgcg ctggatcggg acgtcgttgt agatcgagga cccgccgctc gcctgggcca
 6720
 ggatgtccac cgactccttg cccagtcggc acgcccgcgc cagcaggccg cggcacagca
 6780
 cccgctcctc cagcgtccag gcctcgcccg aagccccctt ggagtcgacg aggtcggcca
 6840
 gccgatgggc gtggaaccgt gcctcgtcgg ccagcagggt cgctcgccg agctgcaggt
 6900
 gggatgatcg cgccgagccc tgctcctcgt actcgggtga ggtgatcttg cggccgggca
 6960
 gcctcccgcg gaagacgtcc tgagcggccg cggccagtcg ggtcatgggt ccgaccgacg
 7020
 aggccgagge cacggccagc atcggcgccc ggaacatcgg tgatccggcg ttgagttcgg
 7080
 aggcgtactg ctgctggagc accgcgccc a gcgaaggac gcgctcctgg ggaacgaaga
 7140
 cgtccgcggc gatggtgctg acgcttcccg agccccggag ccccgagggt tgccagtcgt
 7200
 cgacgatctg cagctgggtc gtcggcacca gggccatcac gggctgcatg ccgccgtcgg
 7260

gggtcggtga gacggcgatc agaacctgcc agtgactgtg ccaggcaccg ctgatgaagc
 7320
 cccacttgcc gttcactacg acaccgccgt cgaccggggc cgccatgccg ccgggactga
 7380
 gggtgccgga gacccggaca tccggccggg agaacacctc gtcctgcacg tggtcgggga
 7440
 agaggcccg ccatcaggtg ggtatccacc acaccgaggc cgtccaggcg gccgatccgt
 7500
 cgccgcgcgc cagctcggcg gccacgtcca ccagggtgcg ggcgtcggac tcgaagccgc
 7560
 cgtaacgggc cggcacgcgc atgcggaaga tcccggcttc ggccatcgcc tcgaccgact
 7620
 cctcgtgcag ccgccggttc tcctcgggtc aggccgcgtg ggactggagc agcggcctca
 7680
 gcttcgaggc ccgttccacc agttcggtag gggcgggctg agacgtctgg tccactcgat
 7740
 cctccaggaa tcatgagacg ccctgtccgc ggtatgcgga agcaggcgtc tgcgcgcatc
 7800
 ggtcaggacg gcgtcgccct gctcccgcat ggttcaccga gttccgcgga cgtcgcatct
 7860
 ccttgattgc cggtcaccta ccccgatgcc gatcgggctg gtgcgacagc gcatcccacg
 7920
 agaagtccac gaacgggtccg ggaagccaga atgtgtttct cggccggagt cacggccggc
 7980
 gccggcgccc gtcgccggtc acgccggacc acgccggac cggtcatgga ggcagcccat
 8040
 gagtgacaac gacagtccgt cccgggtgcc ggccgcggtg gcacccgcca ccgcgaaacc
 8100
 gtcggccggc acggtcctcg gcgccgcggt ggcttcgccc gccgcctaca ccgcggcgac
 8160
 cgcccaggaa gcggcgaccg cgctggtccg catgctgatg gaacagatgg tgctcgggtc
 8220
 cggcgcggtc ggtcccgaga cccgcgcgga ~~cggeecggcg~~ ~~cggcggaccg~~ gctccggcca
 8280
 cgccccggcg ccgcagaccg gaccggacgc gccgggcgaa cccccgcca cgtgggcgcc
 8340
 gaacctcgac gacgggaagg taggaggacg atgaggccgc tcgttcgggc agtgctgcgg
 8400
 ggttccctgc ggcaggtagg gtacgtggac gtggtctccc cgcgccgggc gcgctccctg
 8460
 gtggcgcggg tgtaccggga gaccgaggag cagttcggcg tgctcgcgcc cccctggcc
 8520
 ctccactcgc ccgcccggc gtcgctggcc gcgacgtggc tcatgctgcg ggagacactg
 8580
 ctggtcgacg ggcgggtgag ccgggcggtg aaggagacgg tcgccaccga ggtctcccg
 8640
 gccaacgact gtccgtactg cgtccaggtc catcaggcgg tactcgggac actgcctccg
 8700
 gacggcggcc aggcgggct cctgcggtgg gtccgggagg caggccgacg gcccgcggc
 8760
 ggtgcggtg gcggcgggcg gccgcttccg ttcagcggtg aacaggcacc ggaactgtgc
 8820
 ggcgtcgtg tcacgttcca ctacatcaac cgcgtggtct ccctcttctt cgacgactcc
 8880

cccatgccga cccggacgcc gacaccgttg cgcggggccca tcatgaggac caccgcactg
 8940
 gccatgcgtc ccgtcggccc ggggctgctg acaccgggcg catcgctcgg cctgctgcct
 9000
 ccggtcctcc tgcgcgccgg actggagtg gccgagggca accctttcgt ggcccaggcg
 9060
 ctggggcgctg ccgtcgcgcg tgtggaccag ggagcgcact ggggtgcccga accggtccgg
 9120
 gagcggctgc gcacacgtct ggacacctgg gacggatcgg cgccgggcct cgccggggga
 9180
 tggctcgacg aggcctgtgc cggcctgccg cccaggacg tgcccgcggc acggctggcg
 9240
 ctgctgacgg ccttcgcccc ctaccaggtg ctcccggacg acgtcgagga gttcagacgg
 9300
 cgtcggccca ccgaccgcga actcgtcgag ctacgtcct acgccgcgt gaccacggcc
 9360
 gtccgtgtcg gtcgcacgct cgtcgtgccc gacgccgccg ggccgggatg aacggccccg
 9420
 caacggctcg ggaaggctgt ctacggccg gaggcgtacg ccggtgaggt gctcggactc
 9480
 ctcccagagg cggcgccggg ccctggggtc gacggctgct ccgccggggc gcacgagccc
 9540
 ggggtgcgcc cgggtctcgg tcacgcgcag gggcccgtag aactcgcgcc cgcgcgcgcc
 9600
 gggatcgggt gccgcccga gaccaggcag catccccgcc gcggcgggct gcaggaacaa
 9660
 cggggcgagc ggggagccga gcctgcgcac gggcgcgga aagtcccggc ccagaccggt
 9720
 cgcggtcagc ccgggatgag cggcgagcga ggccagttcc gcgccggact ccgccagtct
 9780
 gtgatggagt tccagcgcga acatgagggt ggccagcttg gactggttgt agggccggta
 9840
 ccggtctgtg cggcgttcgc cgtgaaggtc gctgaagtcg ~~atgcgccca gccggtgcag~~
 9900
 atagctgctg atcgtcacga cccgcgcgcc cggcgcggcc cgcaggctgt ccaggagcag
 9960
 gccggtgagg gcgaagtgcc ccagggtggt cgtggcgaac tggagttcgt gaccgtccgg
 10020
 ggtgcgggcc cggtcggtcc acatcacgcc cgcgttggtg accagcaggt ggatgcgcgg
 10080
 gaagcggctg cgcagttcct cggcgccggc acgcaccgac gcgagacggg aaagatccag
 10140
 ccgtctgacc gtcagttgcg ccgacggcac ccggcttttg atgcgggccg ccgcggcgac
 10200
 cccgcgggtc ggatcgcgca cggccagcac cacgtgggcg ccgtgccggg cgagctcctg
 10260
 cgccaggtgc agtccgatgc cggagctggc accggtgacc accgcgggtg ttccggtacg
 10320
 gtccgggaca tcggcggcgc tccagcgtcg ccgcgttctc atcggctcgt cctcccgggg
 10380
 gatgcgtcag ccggcctggg ccatcgcggc ccggtagccg ttggcgacga tctgccgggc
 10440
 ggagtgtcgt tagtactcgt cgtccttcgg cagctccgtg gcgagaccgc tgacgtaccg
 10500

gttgaacatg cagaacgcgg cggcgatcag aacgggtgtcg tgcagagcgg tgtcgtccgc
 10560
 tccctcggcc cgcgccgagg cgatcacccc tgcggagacc gggcgcgccg cgctctggac
 10620
 ctcggcggcg acggccagca gcgcgcgcgt cctgccgtcg atgggcgcgg tggcgggggc
 10680
 ggcgaggacg gcctcgacga gctgccggcc tcccggcagc tgcgcggcgg cgaaggcccc
 10740
 gtgggaggcg gcgcagaact cgggtggagtt gagatgcgag acgtacgccg cgatgagctc
 10800
 gcgttgcccc ggttccagcg aggacggcgc ccgcagcagg gcgttcgcga gatcgcccag
 10860
 cgggtgctcg gtgccggggg ggtgagccat cagaccactg atgccgggga ggtcgttgtc
 10920
 gagtgtatg tggggcacgg ctcttccttc cgggtggacg aggggcggac ggcggcggat
 10980
 cagggccatt cgacttcgtc gtcggcggcc gcgcagatgc ggggtgaagg ccattccacg
 11040
 tcttccccct ccgttgcgga gtgggcggag gccgtggtga agagggtgac gagtccgaac
 11100
 gtgccgaaga ggagggacag tcggggcaacg tgaagtgcgg taccatgcg agctcctagc
 11160
 gagggcggcg tgaccgcggg acgggtgagac ctctgtatgc caggaagcta gcgaatcgga
 11220
 ctgaggggtg caacgatatg ccagactttg gcaacttgcc tgtgtatcag ccggactgtc
 11280
 ggccgctggt aaagacggaa cggcgagatc ccgcgaccgc gtcgcagagc agcagggtct
 11340
 gctcacccag cgtcggggcg gccagcatgt cgcgtaccgg gagcgtgacg cccagctcgc
 11400
 ggttgatcct gcggaccagc cgggtgatga gcagggagtc gccgccgtgg gcgaagaaat
 11460
~~cagcaccttc ggaggggtcc ggggaagccga gcaggteacc ccagccgcgc accagtacct~~
~~11520~~
 ggcggatgtc gccggtggtg acgaccgtgc gccgggagcc ccgacgtgcc gagcgcagcc
 11580
 gcgaggcatg caccagcgcc acctggtcgc cgaggttgcg ccgcgacagc tcgcgcagcg
 11640
 acaccgtgac gccgaacctc tcggtgatcc tgcggaccag ccgcgtgac agcagcgtgt
 11700
 ccccgcccg cgcaagaaa tccgaatgct cggtagggtc ggagcggccg aggagctcgc
 11760
 tccacgcgc gaccatgaac tccccacgt caccgagccg gtgctcgtcg ccgtcggggc
 11820
 ccttcggcgc gccgatccc gcggaacggt tccggccgga gacggcagag cggtcactgg
 11880
 tcactttcgc cacctccagg ggcattgtgc ggctgcatcg gcttcccgc acggtacggg
 11940
 agcacatgtt gcatggcaat acctttccaa gtcggtggca accctccttg ccatccacc
 12000
 actgcagttg ggcgagatgt gtaggcattc gaggtccgca ggtttgcaa gccgcgcgcg
 12060
 accggcatac tctctggcac aactggaatg agtagcgtgg caggccacgg ggaccgggccc
 12120

gggccaggaa ccttcgtcct ccattctattc gctggggcgt gcacgtgttg gagcagccat
 12180
 ctttcggcgg tcgcctgagg cagctgagga ccgagcgggg tctttcccag gccgcgctcg
 12240
 cgggggacgg catgtctacg ggctatctct cgcgccctgga gtcggggcgcc cggcagccct
 12300
 ccgacgcgcg cgtcgcccac ctggccggac aactcggcat cagcccgtcg gagttcgaag
 12360
 ggccccgggc cacctcgctc gccagatcc tctccctctc cacttccttg gagtccgacg
 12420
 agaccagtga gcttctcgcc gaggcggtac gttccgcgca tggccaggat ccgatgctcc
 12480
 gctggcaggg cctgtggctg ctgggacagt ggaagcgccg gcacggcgac tcggccggcg
 12540
 agcacggcta cctccagcgt ctggtgacgc tgagtgagga gatcggcctg gccgagttgc
 12600
 gcgcacgggc cctgaccag .ttcgcccggg cgctgcgggt actgggcgag atcgttccgg
 12660
 cgggtggaggc tgccgcgcgc gccacccggc tcgcggtgga ccattgcgctg tccagccagg
 12720
 acagggccgc ttcgctgctg gttctggtgt cgggtggaggc cgaggcgaggc cggatgcccc
 12780
 acgcccggcg ccacgccgac gaactgaccg tcctggtgag gggacgggtcc gacactctgt
 12840
 gggccgaggg gttgtggacg gcgggtgcgt tgaaggtgcg gcagggcgag ttcgccgcgg
 12900
 ccgaggtcct tttccaggag gctctggacg ggttcgacag ccgggagaa ctagcatct
 12960
 ggctgcggct gcgcacgcg atggccgaac tccacctgca gaaacttct cccgagcccc
 13020
 acgccgcgca gctctgcac gaggcggcgg aggcggccct tccctttgcc cgcacatccg
 13080
 ctctggaaca gtccctcgcc gctctgcccgg cgcgccctcg cttccatgag ggcagggtcg
 13140
 ccgatgcccg cgcgttggtg gagaggctcg gcaggaccga gctccggctg ccctatcaga
 13200
 gccggatccg cctggaggtc ctcggtcac agctgcgcat cctgagcggg gaggaggagg
 13260
 aaggcctggc cggcctccag ctccctggccg aggaggcgca ggagaactcc aacatcaacc
 13320
 tcgccgcgga gatctggcgg ctcgcgccgg aatgcctgat gcgggcgcgc ggggaagggtcc
 13380
 gcggcgccac cggcgggtga cgccgcgcgc gttcgcgagg tccaccgcgc cgcctggtcc
 13440
 accgccgtcg gcgtgaggcg ccggcgtgtg cgcggcccca cggttgctcg cccttggtgg
 13500
 tgcattctgt ggcacatgtg tacctcctac acagtcaatt gttgcaaaa ttgtcgaacc
 13560
 gaatggcaat tgcttgctt tgctgaagag gcgtgctgat atgcaagtca agtagcctcc
 13620
 tccgatctcg ggcggccata tgggaaacat cgagttgagc ggcgatggcg ttcgtcagtg
 13680
 ctgccgttct ggccaggcaa ctgatgtcga tggggatggc aagattttgc cgaaaaccga
 13740

tacatctctg tccgtcccgg acagccttcg ccccccgggt gacactgctc cggcatggct
 13800
 ccggtttctc gtcgcccggc cgacggaccg caccgtccgg aacgaggcgc cgggtgtcgt
 13860
 ccgctgatgg gcacagcggc ctccggccga gcaggttccc accgagaaga atgccgaggc
 13920
 ccagccgtga accacgacat gtcccagcgt gccttgctgg aggcggcggc cgaggggctg
 13980
 cggcggctgg ccggcgacgc gcggtgccgg agcgcgtcgg ccgcgccctc ctccggcattg
 14040
 agggacatgt tctccccgc cgcccgcggg tacgtgctcg cctcggaccg cgcgggggtc
 14100
 ttcgagcagg ctgtccggct gcgctcccgg gggtagcggg tgagcgcgga gtctgtcggc
 14160
 cccgatcagg gagccaccga cgccctccac gcggagcacg tggtcgaaga gcacctgagg
 14220
 ctgctcgatc aggagccggc ccctgaccgg atcgggtgtg acgtctcccg gatcggcctc
 14280
 gccactcgg cgcagactgc cctgcgcaac accgggcggc tggctgccgc tgcggcgctc
 14340
 cgcgggagcg aggtcgtcct gctcatggag gggtagcagg acatcgacac cgtgtgtggc
 14400
 gtccatgacg ccctgggtgaa ccgttacgac aacgtgggga tcaccttca ggcgcacctg
 14460
 caccgcaccg tggacgacgc catggcggtc gcgggtcctg gccgcaccgt gcggctggtc
 14520
 atgggctcct cggccgagcc tgccggcacc gctctgtccc ggggccccgc tctggaggac
 14580
 cggtagcttg acctcgcgga gcttctcgtg gaccgtggcg tccggctgag tctggccact
 14640
 ccggacgccg aggtcctggc cggggcgag gagcgtggtc tgctcgaacg cgtccaggac
 14700
 atcgagatgc tctacggtgt gcggcccag ctgctgcgcc ~~geeaccgggc~~ ggcgggcccgc
 14760
 ccctgtcgca tccacgcggc ctacgggatg aactggtggc ttccccctgct gcggaggctg
 14820
 gccgacaacc cgccgatggt gctcaacgcc ctggccgaca tcggccggga ccgggagccc
 14880
 gtcgcccacc aggcgtactg acccgccccg ggccgcgac cgcggggcac cggccccggg
 14940
 gcgcgggtca gctcccggtc gccgcgaact gcccgggcct gcgcccctcg cccgcgggcc
 15000
 cccggtaggc ctgggcgatg tccagccact tctccgcctc ctgaccagac gcggtcaggg
 15060
 cgaggtcgtc gcggtggcgg ccgccgggtga ccagcaggca gaagtcgtgc gcgggaccgc
 15120
 tgaccgtctc ggtggcgctc tcggggccga ccgtccagac ctcgcccag ggggcgggtga
 15180
 gctcgaagcg gaacggcgcg gccggcgggg tcagaccgtg ggactcgtag ccgaagtcgc
 15240
 gtgtcagcca ggcgaagtcg acgatgttgc gaagccgctc ggtgggcgtg ccgccgacac
 15300
 ccagggcgtc ggcgacgtcc tggccgtggg cgaacacctc catgatcccg gcgcagccca
 15360

gaacgaccgg cggcagcggg ttgaccagcc acggaaccac ctggccggcg gggaccgchg
 15420
 cgagcgctc gaccgaggcc cgcccatgc cccggaagcg ggtgagcagt tcctgcggcg
 15480
 ggaagccctt gaactgctgc agagccgctg tgaccgctcc gtcgaagttg cctgccgchg
 15540
 cggccgtgac ggccttgaac tcctccggcg ccgccgcgc ggtcctggcc aggttgaaga
 15600
 cgaaggtag gtagggcgatc tggtaggtga cggtagcgc gggcgccgc gtcggagtgt
 15660
 tccaggcttc gtcgtcgatc ttctcgacca gtcgcccag ctctcgatg tcggtggcca
 15720
 ggtgcttag gacgtcgctc agcgaattca tctcgactt ccttactgg ggggtgtccg
 15780
 ggctgggac gatgtccgc cgggtgggc ggccgcccgc ggaagcgccg tcgaggagcg
 15840
 tcggcgacag tcgctaggcg gcgcgtcccg ctaggagcc gggccggtcg gaataggcg
 15900
 cgagcgctc ggccagggt tcgggtatca ggtcggcac ggtcgccgtg ttggggccgc
 15960
 gcatgcaggc gatgcgtgg cgtcccgcg ccaccagggt ctgcccgcg tcgtcgcca
 16020
 gcttgatgta gtcgaaggtag aactccagct gggtagtgc cagctccgag agcctcatc
 16080
 ggatcgacag ttctgtaga gcggtgatc ccggaagaa ctgtagtcc accttaggg
 16140
 tgaagagctt gaggtcctc tggacctcg cgagcaccga aggcgcctc tccttgagaa
 16200
 agagtcccg gcaacgccc tgccaacgaa ggtagttgac gtagtagacg ttgccgacga
 16260
 ggttcgtctc ctggaagccg acggtgtggc ggagctgaa gtagtcagga ttctgcgch
 16320
 tcataggtc gtgccttcg tcgtcgggc cggtagtgc ~~accgagttgc~~ gtagaagcaac
 16380
 tcaactggtc gatggcctg cggggtcggg gggccgct ccgggcgag agtgcggcg
 16440
 gggtagcgc cggcgcgggg tcagccgcgc gccgacggca gcagggaag aacctctc
 16500
 cggccgctc tggagccgc gggggccggt gcgccgtagg tgacggagat acccggctc
 16560
 tgcgcccgc gcacgatcc cggcatcgc cgttcggcga gcgcccgat ggtcatcgc
 16620
 ggattgaccg tcagcgccc gggaaccgac gatccgctc tgacgaagat cccgggtg
 16680
 tcgaggagc cgttgctgtc gtccaggcg gatgtgtgg ggtcgtcgc catccggcag
 16740
 gaggagagc ggtggacggt gtaggcgccc acgaggtcgt tggtagggg catgacctg
 16800
 gccaggccg ccttctccag gatctcctg acctcggcg cgtagcggc ccaggcgccc
 16860
 aggtgttct tcgtcgggtc gtagcgcagg ttgccccgc cgagcatctg ctgggagatg
 16920
 cggtaggcg taccggtggc gggaggggg ccgaagacgc ctctgtgtc gtcctcgatc
 16980

atcgtgaaga tcgtgagcca ggaggtccac tgcttcagga tctccttctt ctccttgccg
 17040
 aaccaggagg ggcccgtagg gccgggcacc tgggcgagga tcgtgccgag gcccgggcggg
 17100
 aagtagagct gttccagggg gtagcgggag tactcgggca acgagccgtc cagcctgtcc
 17160
 cagctcgcca cgggtgggccc cttgccgata tggttggccg cgtaggcgag cccgtcgccc
 17220
 cggtcacagg cgaacagctc ggccgccttg gcctcgtcga tgatggcggt gttgagccgc
 17280
 tcgccgttgc cggagaagta gcgtccgacc gctcgtggca tggtgcccag gtgggcctcg
 17340
 ctgcgctgga ggatcacccg ggtcgcgcgc gcgccggccg ccatcaccac gatcttcgcc
 17400
 tcgatgacgc cgctgcccgc ctggaggcgg tagtcgtcgt cgtgcacgac gttgtagtgc
 17460
 acccggtagg agccgtcggg ggtgcgcgag aggtgctgga cctcgtgcag cgggcggatg
 17520
 cgcccccat gggcgatggc ggccggcagg tagttgacca gcaaggactg cttggcctcg
 17580
 aagcggcagc cggccatcat ccagttgcag ttcacgcact tgggtgttgtc gatggcgacg
 17640
 gcgagggggg tggcggtgcg gccggcgtgg ttgcacgccg cggcccacag tccgccggcg
 17700
 tagctcacgt cgttccagtc ctgccgggtc acggagaggg actcctcgac acggtcgtac
 17760
 caggggtcca gggtttcgcg gctcacgcc cgcggccaca tccggcgctc tatggacccc
 17820
 tgccggtcga agacgaagcg cggggcgcgg ggcacgcgg cgaagtagac gacgctgccg
 17880
 ccgcccacac agttcccgcg gaggatgctc atgccgtccc cgaccgtgaa gtcgaacgcc
 17940
~~ctcgtgtacg aggagccgag tttgtagtgc tgctegaact ccttgctctc cagccacggc~~
~~18000~~
 ccgcgttcca ggacggtgac gtcggcgccc cccgccgcca ggtggtaggc ggcgatggca
 18060
 ccgccgaatc cgctgccgat gacgaggacg tccgtgcgct cggccgtggg gctcatgcgg
 18120
 ggctcccggg ggacgtggtg tcggggtgga ggcgggcgaa ctcacgcccg tagctgtaat
 18180
 ccttgaagcg ccacaggccg tcggcgctcc gcatgctcag gcccatggcc tccagtcccg
 18240
 gatggcgcgt ctcacatgcc tgtgccgtgt tgaggtgcgc ggccgaatcg aaggccatgt
 18300
 tgcagaagag ggacagcagc acccagaact ccttctcggg gtggcctggt gtcgtcagcc
 18360
 gctggatcag cgcgggcccg tccgggtagt cgagcgccac gaaggcggg accgtcgggt
 18420
 cgggagccag gcggcgctcc gccgcgtagg ccagcgcggt ctcgttcacc aggcgcacca
 18480
 ggtcgtccag accctcgtgg atgccggtcg catccattg caggagctcc agggctcccg
 18540
 cctggacggc gccaccgccg gtggacaccc ccgcgatggc ccggtcgtcc gcgaagcgct
 18600

tctggccccg cactgatcgtg tccgcgtagg cctccagggg catgggtccg atatcgccg
18660
ccggcgcccc tcgctcattg tcgtcgcgca actcgctctc cattctcgca gtccggagtg
18720
ggatgccttg tggcgaggag aaagctaggt tcgttcgacc ggttcaagca actagccaaa
18780
gtcgaggcga ccttgaaacc gactccacgg agttggcgcg aagcggcgga tggattacac
18840
gcgcggggcga gcggctcact agtctggccg cacggatgtc ttcattcacct gcacgtggaa
18900
aagcttctgc acgggcaccg catgtggaag tgagccctgg tctcatgtct tgggggaaac
18960
gtgaaaagtg actctgccc aacgcgccgtg gagcgatcac gccgtgtcgt acggatcgat
19020
gaactcatte ccgccgatte cccgcgcctg aacggaatcg atcgttccca tgtgcagcgc
19080
ctcgcgaccg tgtacgcgtc cctgccgccg gtcttggtgc accgcccagc catgcgggtc
19140
gtcgacggca tgcaccgcat cggcgcgggc cgctgaagg ggctggacac ggtcgaggtc
19200
accttcttcg agggcgccga ggagcaggtg ttcttgctgt ccgtcgcggc gaacatcacc
19260
aacggcctgc cgttgctcgtt ggccgaccgc aagaccgccg cggcccgcac tctggcctcc
19320
cacccgaccc tgtccgaccg cgcggtcgcc gcacacgtcg gcctcgacgc caagaccgtg
19380
gcgggggtac ggacgtgttc agccgcgggt tctccgtgc tgaacatgcg caccggggcg
19440
gacggccgcg tccaccgctt ggaccgcacc gccgaacgcc tgcacgcggc cgcgctgctg
19500
accaggacc cgggactccc gttgcgtctc gtcgtcgagc agacgggggt gtcgtgggc
19560
acggcccacg acgtccgccg tccgctgctg ~~cgggcgagg~~ ~~acccggtccc~~ gcagaaccg
19620
cagagcgcga tgctggagcc gggactcgcc ccgcagaaga aggcgacggc caagccgccc
19680
gtcggccccg ccgcccgtcc ggtcccgaag gtgccgcccc ccgtcgccgg caggccgccc
19740
gtgtcaccgc ggtcccgggc cccgctggag gcgctgcgca agctctccaa cgaccctcc
19800
ctgcgccact ccgaccaggg gcgcgaactc atgcgtggc tgcacaaccg gttcgtcgtc
19860
gacgaggcgt ggcgcgggcg cgcggacgcg gtcccggccc actgcgtcga ctcgatggcg
19920
gagctggcgc agcactgtc ggacgcctgg caccggttcg ccgaggagat ggttcggcgc
19980
cggcacagcg ccgcggccga cggctccgga ctccgcacga ctacgccaac tcgccgttga
20040
cggcctactt cgacaggag ttacggtgac cacgaacacc atcgaggacg cggctccgcc
20100
ggtcgtcgag tacatgcacg tcaacctggg tcagaacctc acgatcgatg acatggcgcg
20160
cacggcgatg ttcagcaagt tccatttcac ccgcattctc cgcgaagtca ccggtacctc
20220

tcccggggcgt ttctgtgccg ccttacggat tcaggaggcc aagagacttc tcgtgcacac
 20280
 tgcactcagt gtggccgata tcagcagtcg ggtcggctac agcagtgtcg gtactttcag
 20340
 ttctcgcttc aaggcctgtg tggggctttc cccgagcgcc tatcgcgact tcggcgggggt
 20400
 gcagccgggt tttccctccg ccgcggcccc tctcactccc accgcgcaca atccctccgt
 20460
 gcgcggccgc attcactccg ccccggtga caggcccga aggatcttcg tgggcctgtt
 20520
 ccccggcagg atgcgccagg gccgcccggc gcgctggacc gtcatggaga gtcccggggc
 20580
 cttcgagctc cgggacgtgc ccgtgggcac ctggcacatc ctggtccact ccttccccgc
 20640
 cggacaccgg ccgcaccagc tcgactccga accgctgttg ctcgggcaca gcggaccgt
 20700
 cgtggtgcac cccggtgcc tgcctcggcc ggcgacatc ctcctgcgcg cgggtggacg
 20760
 cctcgatcca ccggtcctgc tggcccactt cgcgctggag agccgcctca cctcgccgta
 20820
 ctcaccgtca tcggtagccc tccgcgcac cgcagggaga gcatgggttc ggcaaccgcc
 20880
 cgggtgtccg cgacggtacg cagatcgaga tcgcgggtga ccagggccgt gacgaacacc
 20940
 gcctccatca tcccagaggt gctgccgacg cagaaccggg gccccgcgc gaacgggatg
 21000
 tacgcgtacc gcggccggtc ggcggtctgc cggggttcga accgctcggg gtcgaagcgc
 21060
 tcggggctct cccacagccc cggatggcgg tgcgatgtgt acgggcagac cagcacatcc
 21120
 gatccggcgg acaccgtgta gccgccgacc acatcgcgtt gctggggccac cctgggcagg
 21180
 atccc
 21185

<210> 3
 <211> 15
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: primer

<400> 3
 atgggcatga cgggt
 15

<210> 4
 <211> 15
 <212> DNA
 <213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 4
ctagaggatc ccggg
15

<210> 5
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 5
atgccgcgga ttccc
15

<210> 6
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 6
tcagctgtcg atgtc
15

<210> 7
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 7
atgaccatcg ccact
15

<210> 8
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 8
tcagaggccg agcac
15

<210> 9
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 9
atgagctcgc tactg
15

<210> 10
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 10
ctaggagccg gtcgc
15

<210> 11
~~<211> 15~~
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 11
atgagcagca gcgcc
15

<210> 12
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 12

tcattcggtcg gctgc
15

<210> 13
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 13
gtgagggctc tgccg
15

<210> 14
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 14
tcagacggcg gaggg
15

<210> 15
<211> 15
<212> DNA
~~<213> Artificial Sequence~~

<220>
<223> Description of Artificial Sequence: primer

<400> 15
gtgagcgtca ccgac
15

<210> 16
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 16
tcaaccgccc ctgcg
15

<210> 17
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 17
atgaggatgc tgggtg
15

<210> 18
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 18
gtggctgtgc tcgca
15

<210> 19
<211> 15
<212> DNA
<213> Artificial Sequence

~~<220>~~
<223> Description of Artificial Sequence: primer

<400> 19
atgaggatgc tgggtg
15

<210> 20
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 20
tcagccgacg gcgtc
15

<210> 21
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 21
gtgacagcag tcaag
15

<210> 22
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 22
tcatgtggcc ggttg
15

<210> 23
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 23
gtggagtact ggaac
15

<210> 24
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 24
tcaggcctga ggggc
15

<210> 25
<211> 15

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 25
gtgccccacg gtgca
15

<210> 26
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 26
ctacagccct ccgag
15

<210> 27
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 27
~~atgtcttcaa cccgt~~
15

<210> 28
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 28
tcagccgcgc aggaa
15

<210> 29
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 29
atgctggaga aatgc
15

<210> 30
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 30
tcagacgagc tcctt
15

<210> 31
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 31
atggagtacg gcccc
15

<210> 32
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 32
tcatgccgtg cgcac
15

<210> 33
<211> 15
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 33
atgagcggcg gcccg
15

<210> 34
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 34
tcacctcgcc ggacg
15

<210> 35
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 35
atgtcgttac gtcac
15

<210> 36
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 36
tcagccgaag gtcag
15

<210> 37
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 37
atgaaggcac ttgta
15

<210> 38
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 38
tcaggccgcg atctc
15

<210> 39
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 39
gtggacgtgt cagcg
15

<210> 40
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 40
tcaggaccgc gcacc
15

<210> 41
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 41

atgaagccga tcggg
15

<210> 42
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 42
tcaggacgac ttggt
15

<210> 43
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 43
atgccttccc ccttc
15

<210> 44
<211> 15
~~<212> DNA~~
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 44
tcaggtgcgc tcggc
15

<210> 45
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 45
gtgagagacg gccgg
15

<210> 46
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 46
tcacgtggtg atggc
15

<210> 47
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 47
atgaccgacc agtgc
15

<210> 48
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 48
tcacagcaac tcctc
15

<210> 49
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 49
gtgagcttgt ggtct
15

<210> 50
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 50
tcaggccggt tcggc
15

<210> 51
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 51
gtgcgtccct tccgt
15

<210> 52
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 52
tcagcggagc ggacg
15

<210> 53
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 53
atgccagcac cgact
15

<210> 54
<211> 15

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 54
tcagtcgttg ccgcg
15

<210> 55
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 55
atgccagcac cgact
15

<210> 56
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 56
tcagtcgttg ccgcg
15

<210> 57
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 57
atgaccaagc acgcc
15

<210> 58
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 58
tcatacggcg gcgcc
15

<210> 59
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 59
gtgagcgcac aactc
15

<210> 60
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 60
tcacggctgt gcctg
15

<210> 61
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 61
atgtcttcaa cccgt
15

<210> 62
<211> 15
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 62
tcagccgcgc aggaa
15

<210> 63
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 63
atgacgacgt ccgac
15

<210> 64
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 64
tcaggaggtg aaggg
15

<210> 65
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 65
atggcattga ctcaa
15

<210> 66
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 66
tcagcgcagc tggat
15

<210> 67
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 67
atgacgcggc cggtg
15

<210> 68
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 68
tcagcgggtg agccg
15

<210> 69
~~<211> 15~~
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 69
gtgtccaccg tttcc
15

<210> 70
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 70

tcactgcgtt ccgga
15

<210> 71
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 71
gtgtgcccgg tgacagac
18

<210> 72
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 72
tcagcccacg ggctggga
18

<210> 73
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 73
gtggtgggac atgaggac
18

<210> 74
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 74
tcagaccgac gacatctg
18

<210> 75
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 75
atggccggcc tggtcacg
18

<210> 76
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 76
tcaggaccgc agggtcac
18

<210> 77
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 77
gtggaccaga cgtctacg
18

<210> 78
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 78
tcatgcaggt gcagcgtg
18

<210> 79
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 79
atgaggccgc tcgttcgg
18

<210> 80
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 80
tcatcccggc ccggcggc
18

<210> 81
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 81
atgagaacgc ggcgacgc
18

<210> 82
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 82
tcacggccgg aggcgtac
18

<210> 83
<211> 18

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 83
gtgtatcagc cggactgt
18

<210> 84
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 84
ctactcattc cagttgtg
18

<210> 85
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 85
atgtctacgg gctatctc
18

<210> 86
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 86
tcagccgccg gtggcgcc
18

<210> 87
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 87
atgttctccc ccgccgcc
18

<210> 88
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 88
tcagtacgcc tgggtgggc
18

<210> 89
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 89
atgaattcgc tcgacgac
18

<210> 90
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 90
tcagctcccg gtcgccgc
18

<210> 91
<211> 18
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 91
atgaccgcga cgaatcct
18

<210> 92
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 92
ctaggcggcg cgtcccgc
18

<210> 93
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 93
atgagcacca cggccgag
18

<210> 94
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 94
tcagccgcgc gccgacgg
18

<210> 95
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 95
atgaccctgg aggcctac
18

Sub
B1 <210> 96
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 96
gtgaaaagtg actctgcc
18

<210> 97
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 97
gtgaccacga acaccatc
18

<210> 98
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 98
tcatgcgggg ctcccggg
18

<210> 99
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 99

tcaacggcga gttggctg
18

sub
BT
<210> 100
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 100
tcacccgcga tctcgatc
18

<210> 101
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<220>
<223> partial ORF

<400> 101

a!
Cont
<210> 102
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 102
tcacctgcgc gtactcac
18